APRIL 25, 1960

PAPER TRADE JOURNAL

Continual Updating is Vital! How, Keeping Production Up, $$ Down?

Isotropic Extensible Paper? A Clupak Exec Tells in Interview

Finishing IV: Broke Reduction, Q.C. Offer Large Money Savings

Caliper Profiler Found Highly Useful in West Virginia Mill

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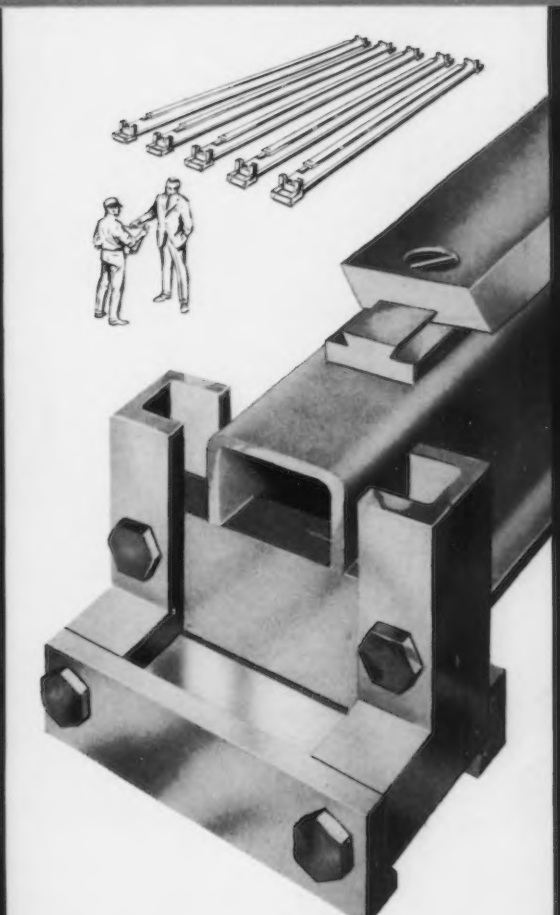

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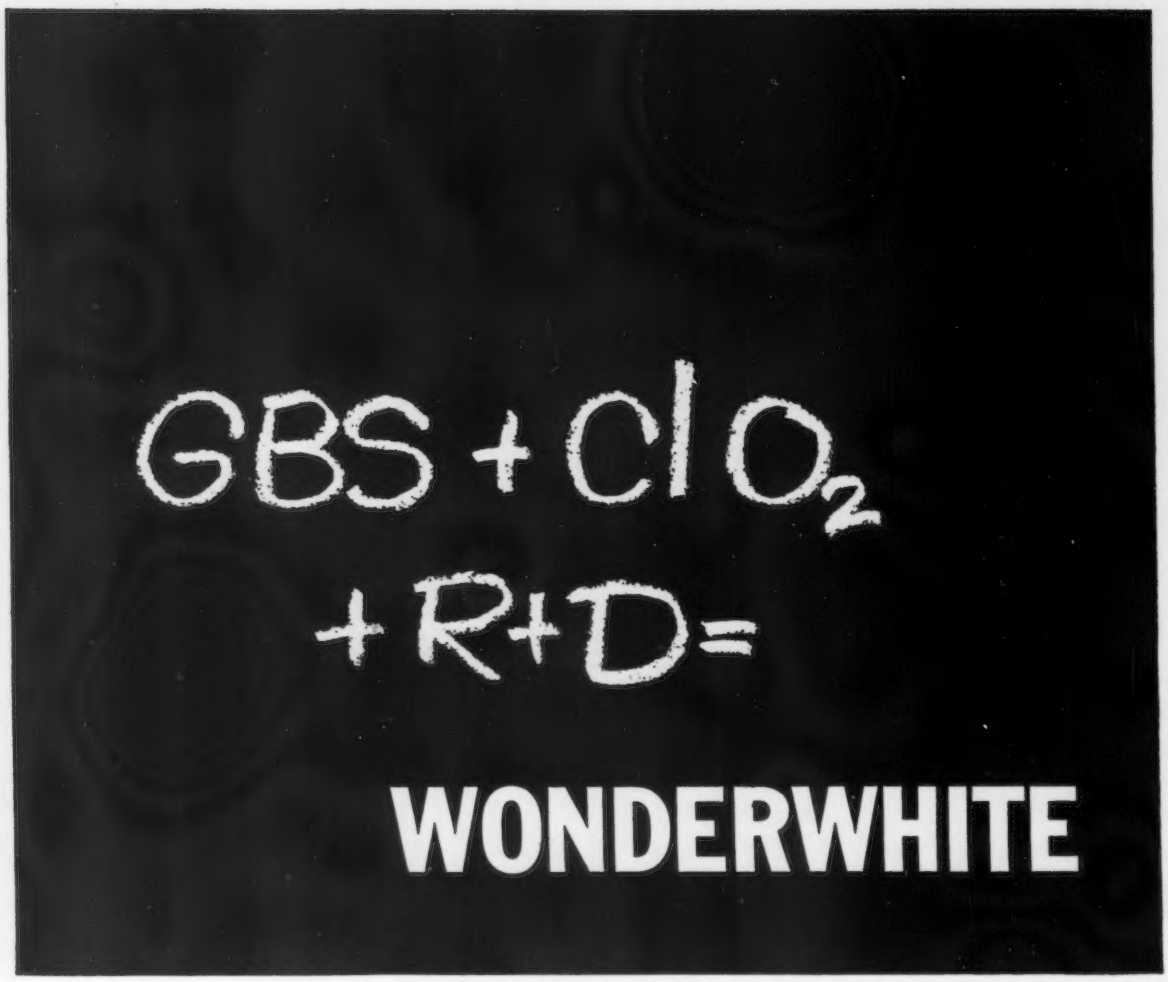

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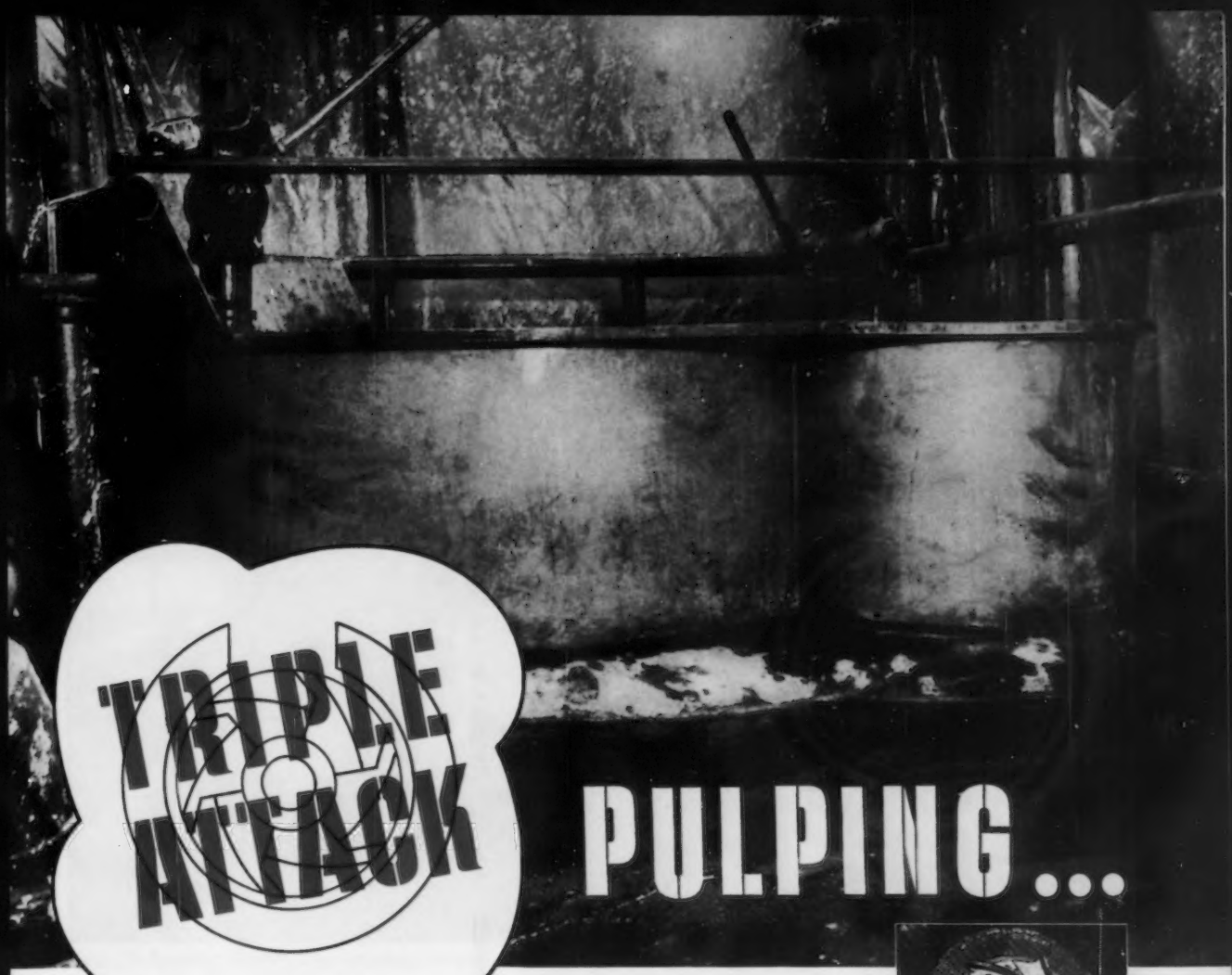

TRIPLE ATTACK PULPING...

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Triple Attack pulping is an advanced method, exclusive in the new Emerson Pulper, that *multiplies the number of defibering cycles which take place within a given period.* Thus, it guarantees maximum defibering on all types of stock — in 20 to 30 minutes — wet strength slightly longer. It also offers complete pulping at 8 to 12% consistency, uniform mixing, fast charging and dumping, and extremely low power consumption at full or partial capacity.

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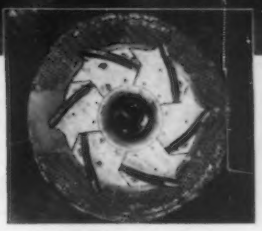
For further information, please write to The Emerson Manufacturing Co., Division of John W. Bolton & Sons, Inc., Lawrence, Massachusetts.



The rotor and extraction plate

View of vortex and stock flow at 8-9% consistency

Emerson TRIPLE ATTACK PULPER

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Note the perfection of training and troughing shown in this photograph.

Marathon-Southern's new mill is 100% equipped with "U.S." Conveyor Belts

United States Rubber literally has the run of the mill in the Marathon-Southern Corp.* mammoth unit at Naheola, Alabama. "U.S." Conveyor Belts are used as follows:

*Two U.S. Matchless® Conveyor Belts for log sorting.
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*One U.S. Oil-resistant Conveyor Belt used as a digester feed chip conveyor.
*One Oil-resistant belt used as screen rejects conveyor.
*One Oil-resistant belt used as purchased chip conveyor.
*U.S. Giant Conveyor Belt used as refuse conveyor to boiler.
*Special Tan Natural Rubber Covered Belt used as stock conveyor from washer.
*Special Tan Natural Rubber Covered Belt used as stock conveyor to MD storage.
*U.S. Giant Conveyor Belt carrying coal to crusher house.
*U.S. Giant Conveyor Coal Stacker Belt.
*U.S. Giant Conveyor Belt carrying coal from crusher house to boiler.
*U.S. Giant Conveyor Belt used on coal reclaim feeder.

Marathon-Southern's selection of "U.S." Belts *exclusively* is due to their long-established record of low-cost haulage, durability and freedom from maintenance. This is another mill in which "U.S." demonstrates the kind of performance that has made it the foremost authority in belting.

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PUBLISHED WEEKLY SINCE 1872

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REMEMBER THESE DATES

May 23-25. TAPPI Coating Conference, Edgewater Beach Hotel, Chicago, Ill.

June 14-16. TAPPI Pulp Bleaching Conference, Edgewater Beach Hotel, Chicago, Ill.

June 7-9. PIMA National Meeting, St. Francis Hotel, San Francisco, Calif.

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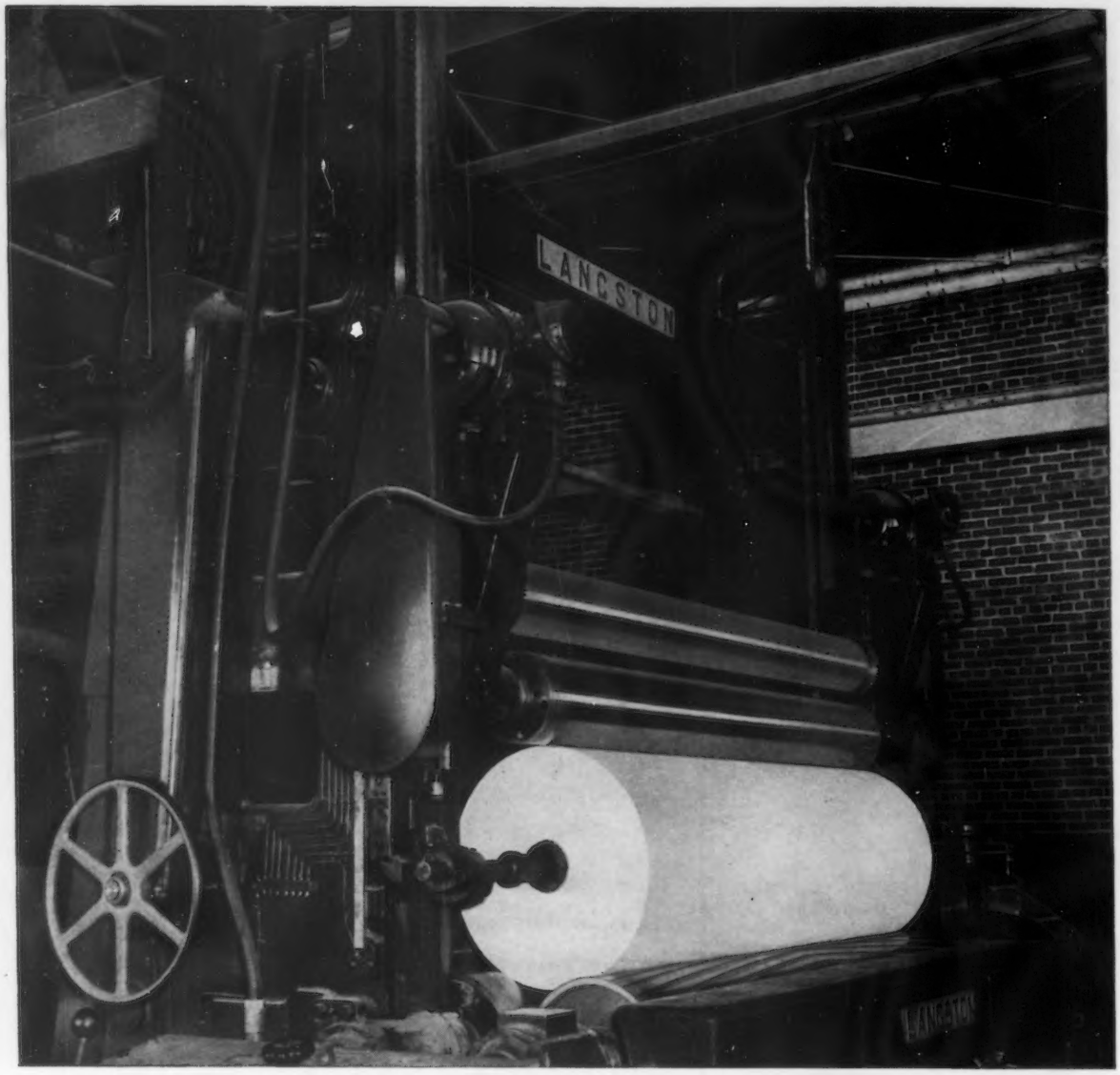

Langston Slitter and Winder features precision roll density control

Here's a way for you to get uniform roll density from the core to the outside. This type "DH" Slitter and Winder features hydraulic rider roll control that automatically adds or subtracts rider roll weight.

This arrangement makes it possible to constantly maintain correct nip pressure to compensate for the changing diameter and weight of the rewound roll. A simple valve permits setting the correct rider roll weight for various grades and basis weights of both paper and board.

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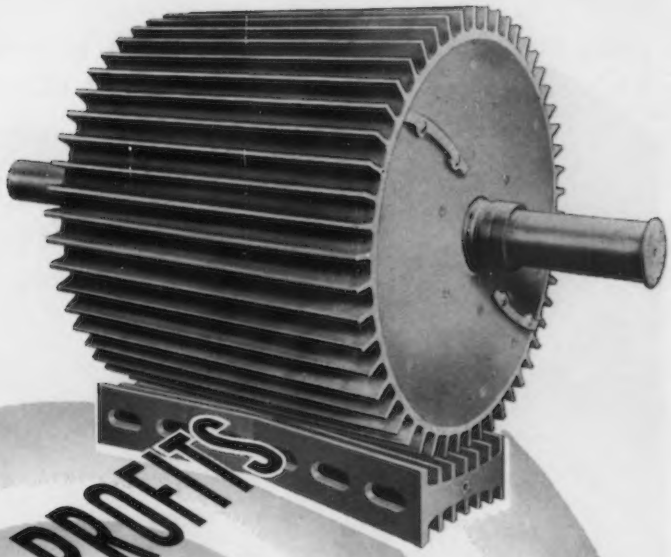

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Ask a Rhoads belt-drive engineer about Tanastic nylon core leather belting, Texalon nylon core snythetic belting, or famous Rhoads Tannate leather belting. Literature on request. Address Engineering Department, J. E. Rhoads & Sons, Wilmington 99, Delaware.

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ONE *of a Series of Test Procedures on Horse Head Titanium Dioxide*

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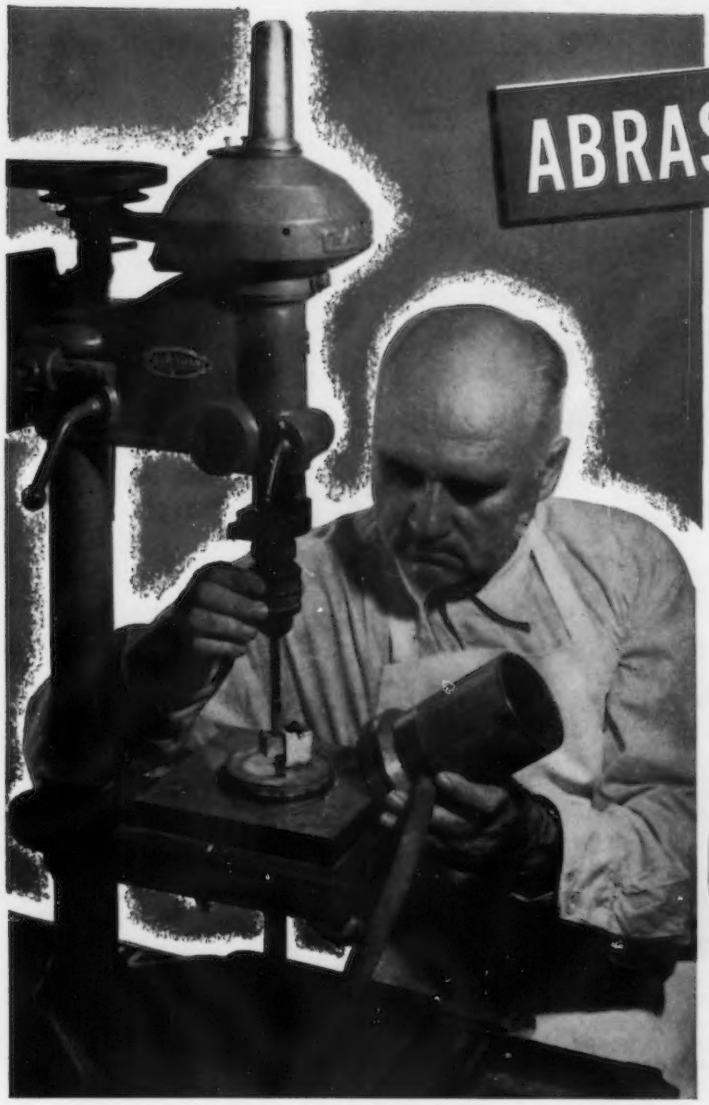
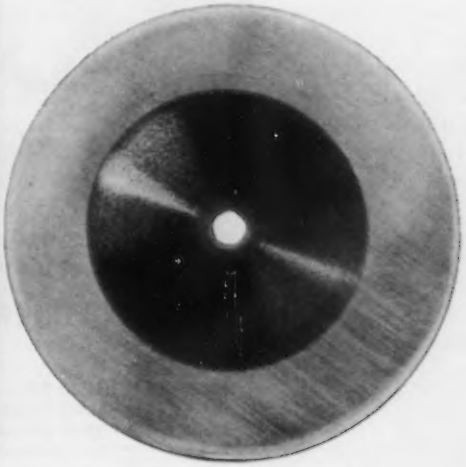


A new method of evaluating abrasiveness of paper fillers employs a drill press in which a felt pad immersed in filter slurry is rotated under pressure against a brass disk. The amount of metal abraded is determined by weighing the disk before and after the test.



In the broad range of studies in the current paper research program at New Jersey Zinc, evaluation of the abrasive effect of various pigments occupies a considerable portion of the time of the laboratory's investigators. And well it might, since abrasiveness is a topic of extreme importance to paper maker and paper user alike.

The development of new and more practical paper pigment testing techniques, such as the one shown here, is providing new knowledge on the performance of titanium dioxides in high grade paper products. Too, it is serving to keep HORSE HEAD titanium dioxides in the forefront of top quality, dependable paper pigments.

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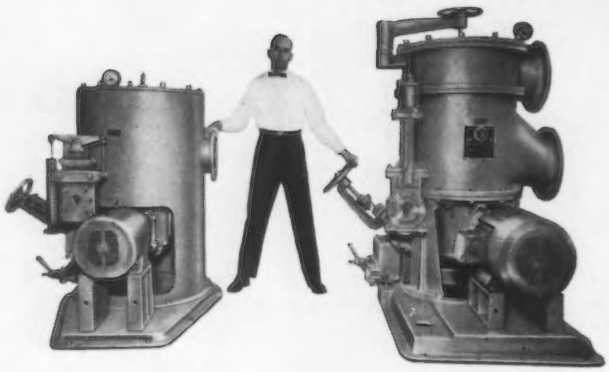

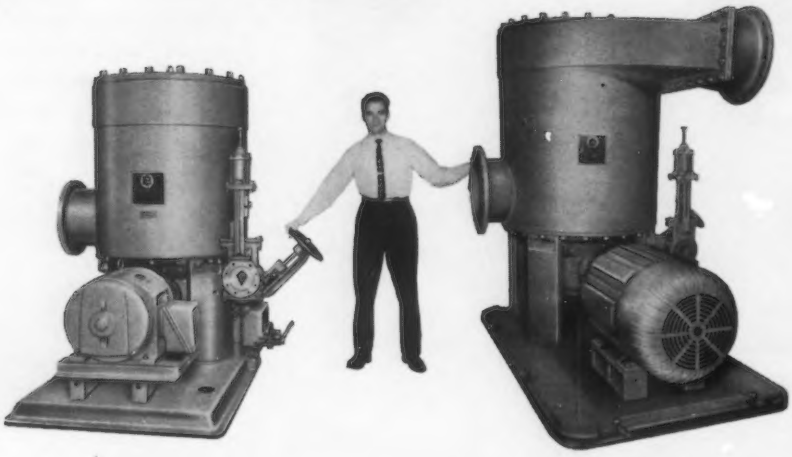

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Trends

Will We Hit 36 Million Tons?

Doubts are expressed in an Economic Review and Forecast article in this issue that paper and board will hit 36 million tons this year as previously predicted. W. LeRoy Neubrech in an article on page 35 points out this possibility. It is the feeling of Paper Trade Journal that it is still likely that the 36 million ton figure will be reached or exceeded. During the first quarter of this year the paper mills operated at 97.6% of capacity compared with 90.5% for the first quarter of 1959. Paperboard mills at 93.3% for the first three months (92.7% for 1959) did not show nearly the same increase but with the high paper mill operating rate only a modest increase in board demand is needed to hit the 36 million ton target.

Important Development in Extensible Paper Revealed

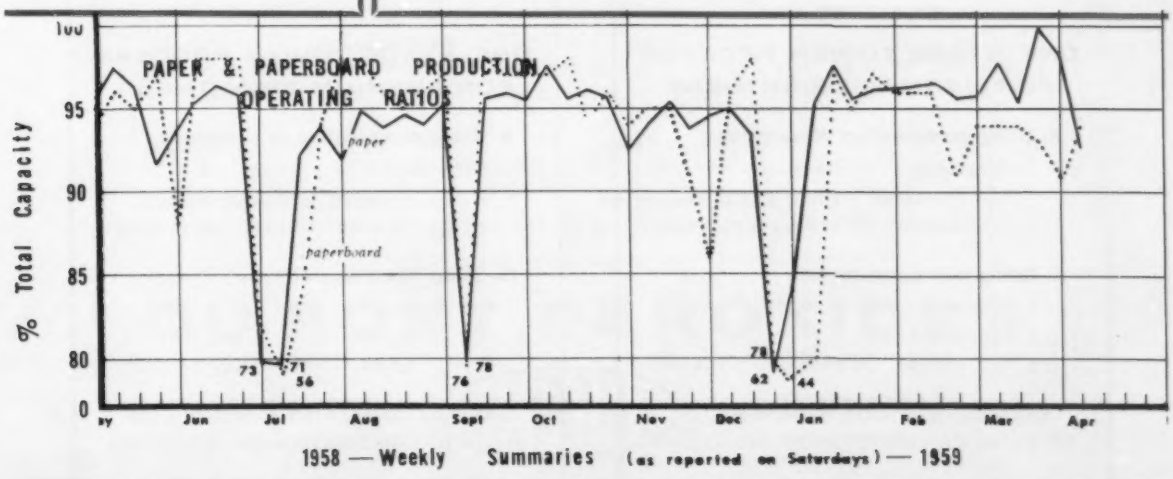
A major break-through in the development of extensible paper is reported for the first time anywhere in an exclusive interview with H. Welsh, vice-president, Clupak, Inc., in this issue. The new stretchable paper, called isotropic Clupak paper, with a high degree of stretch in all directions is nearing commercial production.

Dept. of Complete Misinformation

"No one would deny that most paper producers, like other manufacturers, have had some increased costs during the past year. However these have been modest in most cases, and certainly could be offset by the greater volume of production" is a statement in the April 13 issue of Bulletin of the National Association of Purchasing Agents. A study of paper company financial statements shows the complete fallacy of the above statement. A recent issue of the Forbes magazine stated of paper under the title—But Where are the Profits . . . "demand for paper has been growing steadily. But recently profits in the industry have been another matter."

Corr. Box Output Up 3% in First Quarter

Corrugated box production in the first three months of this year ran close to 3% above the first quarter of 1959.



How Du Pont brighter pulp...save

Mechanical pulp bleaching...

A combination of peroxides can save up to $1.25 a ton over a hydrogen peroxide treatment.

Over 95% of all groundwood bleacheries have found that a combination of hydrogen and sodium peroxides cuts bleaching costs up to $1.25 a ton. The reason—combination formulas eliminate the use of caustic soda.

How is this possible? Because of the bleaching chemistry involved. When hydrogen peroxide is used alone, substantial quantities of caustic soda must be added to assure effective bleaching. But when sodium peroxide is part of the formula, caustic soda is formed, and additional quantities aren't needed. When caustic limits of this solution are reached, hydrogen peroxide is added to complete the balance, and the bleaching formula is now ready to use.

The charts below show the savings possible in a one-stage tower bleaching process when a combination of peroxides is used instead of a single hydrogen peroxide: For normal brightness, the saving runs from $.90 to $1.00 a ton; for premium brightness, $1.15 to $1.25 a ton.

You can obtain cold soda pulp and groundwood pulp brightness as high as 75 by this method. Cold soda pulp can be bleached in the refiner in absence of a bleaching tower with brightness gains up to 20 points.

For further information, get in touch with your Du Pont Representative listed at right.

EXAMPLE #1

ONE-STAGE TOWER PROCESS FOR NORMAL BRIGHTNESS

A. Using combination of peroxides

5.0% silicate
1.2% "Solozone" sodium peroxide
0.7% "Albone" 50 hydrogen peroxide

B. Using one peroxide only

5.0% silicate
1.2% NaOH
1.7% "Albone" 50 hydrogen peroxide

SAVINGS OF $.90 TO $1.00 PER TON BY USING COMBINATION OF PEROXIDES

EXAMPLE #2

ONE-STAGE TOWER PROCESS FOR PREMIUM BRIGHTNESS

A. Using combination of peroxides

5.0% silicate
1.5% "Solozone" sodium peroxide
1.25% "Albone" 50 hydrogen peroxide

B. Using one peroxide only

5.0% silicate
1.5% NaOH
2.5% "Albone" 50 hydrogen peroxide

SAVINGS OF $1.15 TO $1.25 PER TON BY USING COMBINATION OF PEROXIDES

Peroxides give you you up to $1.25 a ton!

Chemical pulp bleaching...

Peroxides—alone or in combination —give brightness up to 92 with excellent stability.

Mills throughout the country are finding that peroxides, alone or in combination, can give chemical pulp high brightness stability—without significant decrease in pulp strength or yield.

IN KRAFT BLEACHING, a five-stage process is producing outstanding results for a number of mills, among them a southern papermaker now producing over 100,000 tons of high brightness pulp annually. This process combines the best advantages of three bleaching agents—hypochlorite, chlorine dioxide and peroxide—to give brightnesses up to 90 with excellent brightness stability.

IN SULFITE BLEACHING, three peroxide processes are proving successful—a single-stage peroxide process which brightens pulp up to 75; a two-stage hypochlorite-peroxide process which brightens up to 86; a four-stage chlorine-caustic-hypochlorite-peroxide process which brightens up to 92. For information, call your Du Pont Representative listed below.

TECHNICAL SERVICE FOR YOU . . . Peroxides have a powerful bleaching action that produces high brightness pulp with excellent brightness stability. But it takes skill and experience to use peroxides efficiently. With Du Pont "Albone" hydrogen peroxide and "Solozone" sodium peroxide, you get the most authoritative advice and service available . . . from the manufacturer of *both* products.

Du Pont specialists can give you practical bleaching formulas for groundwood, cold soda, kraft and sulfite. They'll help you set up your bleaching operation, train operators, and check frequently to make sure your bleaching quality stays high and costs stay low.

Call your Du Pont representative listed below; he'll be glad to start a program to help you determine the advantages of Du Pont peroxides in your mill, or write: Du Pont, Electrochemicals Department, Peroxygen Products Division, Wilmington 98, Delaware.

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P. E. Kiefer, Portland, Oregon • CApitol 7-1281

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R.W. Hammond, Charlotte, N.C. • FRanklin 5-5561

Or call: N. J. Stalter, Wilmington, Del • PRospect 4-4698

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PAPER TRADE JOURNAL

WEEK OF APRIL 25, 1960

Groundbreaking Held for New Simpson-Lee Paper Mill

Groundbreaking ceremonies for the Simpson-Lee Paper Co.'s $7 million plant just south of Ripon, Calif., were held on April 11.

The Lee Paper Co. of Vicksburg, Mich., and the Simpson Paper Co. of Washington merged last year. The Simpson plant will furnish pulp to the Ripon mill.

The new Ripon paper mill will make an estimated 15,000 to 18,000 tons of paper a year, with the finished product to be shipped both by rail and truck.

Plans for controlled discharge of waste into the Stanislaus River have been approved by the Central Valley Regional Water Pollution Board.

Case Bros. to Erect Brattleboro Plant

Case Brothers, Inc., specialty paperboard manufacturer, now operating plants in Manchester and East Hartford, Conn., have announced the construction of a new plant in Brattleboro, Vt.

Construction of the 2½ million dollar plant will commence shortly and operations are expected to start in early 1961.

The company points out that the new plant represents an expansion program and that there are no present plans to shut down either of the existing plants although there will undoubtedly be some shifting of product lines between plants. The company plans to maintain its general offices in Manchester, Conn.

Case Bros., Inc., was established in 1861 and is still operating under the same family ownership. The company employs about 180 persons in its Connecticut plants.

Merger of All Unions in Printing, Paper and Converting Fields Planned

Eventual merger of all unions in the printing, paper and converting fields "into one great organization" is the purpose of a unity declaration signed by two representatives, it is reported. The agreement was signed in Washington by vice presidents of the International Printing Pressmen and Assistants Union of North America and the United Paper Makers and Paper Workers Union.

Although the signing of the declaration was in Washington details of the agreement were released in Atlanta by Walter J. Turner, of Los Angeles, vice president of the International Printing Pressmen, after he left Washington. According to releases put out by Mr. Turner, the purpose of the declaration is bring about merger of the two organizations which will give a total membership of about 263,000.

The declaration, according to Mr. Turner, agreed to: strive for organic unity of the two unions; cooperate in collective bargaining to secure gains in wages and working conditions; to provide benefits of unionism to workers not presently organized; cooperate in strikes or lockouts; cooperate in all other ways to benefit the unions.

Possible Plant on Columbia River Studied

Preliminary studies have been made by Peshastin Lumber Co. of the possibility of establishing a pulp plant on the Columbia river near Olds Station, according to Owen Sawyer, manager of the lumber company.

Whittemore Resigns as Brown Co. Chairman

Laurence F. Whittemore resigned as chairman of Brown Co. at the annual stockholders meeting because of ill health. Henry F. Scheetz, Jr., was elected in Mr. Whittemore's place. In addition to Mr. Scheetz, three other directors representing the outside investors, led by Thomas M. Evans (Crane Co. and H. K. Porter Co.) were elected to the nine-man Brown board of directors. They are Charles L. Holbert, William A. Greene and Irving B. Hass.

Although too ill to conduct the entire meeting, Mr. Whittemore was apparently successful in preventing an outbreak of open fighting between stockholders groups seeking control of Brown.

Mr. Holbert is president of H. K. Porter Co.; Mr. Greene is consultant to Crane and Mr. Hass is a New York stock broker.

The election of Mr. Scheetz as Brown chairman instead of the old management's reported nominee, attorney John L. Sullivan of Manchester, N. H., was said to be a sign of the new group's strength.

Paper and Paper Board Production

The American Paper and Pulp Association reported the ratio of the United States paper production to mill capacity for the week ending April 9, 1960, at 92.8 per cent compared with 98.3 per cent, revised for the preceding week. The ratio was 95.2 per cent for the corresponding week a year ago.

The National Paperboard Association reported the paperboard production ratio for the week ending April 9, 1960, at 94 per cent, compared with 91 per cent for the preceding week and 94 per cent for the corresponding week a year ago.

(Detailed statistics on page 52)

Price Bros. Plans Extension to Paper Mill

Price Bros. and Co., Ltd., will build a $22,000,000 extension to its Kenogami, Que., mill, shareholders were told at the annual meeting.

The extension will comprise a new 200-ton kraft pulp mill with a new paperboard machine and pulping and refining equipment.

The new project is expected to be completed in two years. Kenogami is 115 miles north of Quebec.

Green Bay Paper Installs Screw Press Washers

Construction has begun on a $320,000 improvement to the pulp mill for Green Bay Paper and Pulp Co., George Mackin, executive vice president and general manager announced.

The new building will join the present pulp mill and paper mill buildings and will add about 7,000 square feet of area to the operating levels.

The addition will allow installation of new chemical extraction and pulp washing screw presses. These presses, capable of processing 200 tons of pulp a day, are now being fabricated by the French Oil Mill Machinery Co., Pique, Ohio. They are scheduled for delivery in early summer.

The 375-h.p. stainless presses, the largest ever made, were developed through research conducted at Green Bay and are part of the company's long range stream improvement program, Mr. Mackin said.

Schedules call for completion of the building by July 15 and the new system in operation by late summer.

R. B. Mesrobian

New Research Organization For Concan

A general packaging research and development division has been established by Continental Can Co. to bring together the research programs at present undertaken separately by six of its divisions. The new division will do research on the improvement of containers derived from paper, plastics, and combinations of the two, and on closures for glass and other containers.

Dr. Robert B. Mesrobian, who had been general manager of Continental's paper and plastic container research and development will direct the new division's activities.

A new research and development center is under construction in Chicago, for 1961 opening. The center will carry on research for these Continental divisions: flexible packaging, now at Mount Vernon, Ohio; fibre drum and corrugated box, presently at Van Wert, Ohio; boxboard and folding carton at Uncasville, Conn.; and bondware, white cap and bond crown, and plastic bottle and tube, all now in Chicago.

Gilman Starts Multi-Million Program

Work has started on a major modernization program at the Gilman Paper Co. mill in Gilman, Vt.

Plans call for complete modernization of the stock preparation systems for both No. 1 and No. 2 paper machines and the rebuilding of No. 2 machine. Work will be completed on the preparation systems in six months and on the machine in 10 to 12 months.

Canadian Fine Paper Production Shows Gain

Canadian fine paper production and shipments gained in February and the first two months.

Output for the month was 28,948 tons, up 7.6 per cent from the year ago figure of 22,259 tons. To the end of February, production was 46,123 tons as against 45,275 tons last year.

Shipments in February totalled 23,317 tons as compared with 20,855 tons in 1959. Included in this year's total were exports of 1,573 tons, up from 1,201 tons last year. Total shipments in the first two months were 44,777 tons as against 41,598 tons a year ago.

Coated paper output in the first two months was 5,278 tons and shipments were 5,212 tons. In the same period last year output was 5,186 tons while shipments were 4,995 tons.

Scholarship Available

A scholarship in the amount of $750 is offered by PAPER TRADE JOURNAL to a student who wishes to enter the University of Maine to major in pulp and paper technology. This is a continuing grant available in the freshman and sophomore years. The main purpose of the scholarship is to enable a student to major in pulp and paper at the University of Maine who might not otherwise be able to do so. Therefore the financial need of the student will have an important bearing on the choice of the recipient, who will be selected by the Freshman Scholarship Committee of the University of Maine.

Application forms for the PAPER TRADE JOUTNAL scholarship should be requested from the Director of Admission, University of Maine, Orono, Me. Early application is advisable.

Noralyn Comments . . .

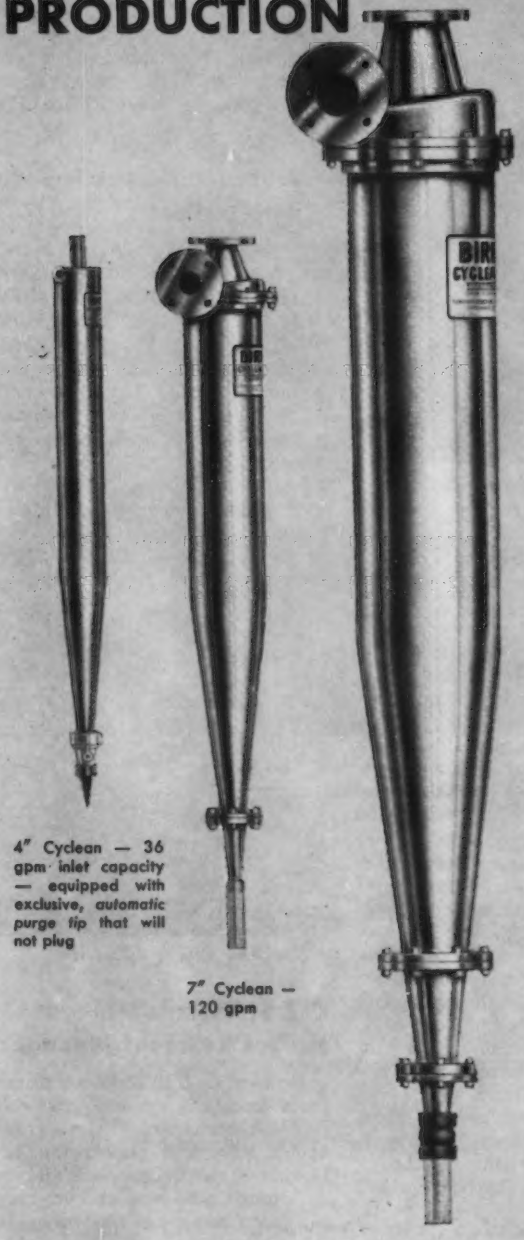
We have received the following comments in connection with our report of the address of J. H. Ainsworth, vice president of Noralyn Paper Mills, Inc., to the annual meeting of the American Pulpwood Ass'n. In reply to our statement that Mr. Ainsworth failed to reveal any information about the Noralyn process for manufacture of newsprint from hardwood, it has been pointed out that when Mr. Ainsworth was asked to address the APA, he declined on the basis that his company was not yet ready to reveal details of their process. He was prevailed upon to give the talk in spite of this.

The editors of Paper Trade Journal intended no criticism of the Noralyn process or Mr. Ainsworth, but solely to indicate the general disappointment of the meeting that no information was given on the process. Noralyn's position is that, "Knowledgeable and reasonable thinking persons should not expect us to consider the end product of a lifetime of costly work-effort as being something to donate to the public domain until such time as we would be well established ourselves under the process in our own mill."

UP . . . REJECTS PRODUCTION AND BREAKS DOWN

when you install

BIRD CYCLEANS



4" Cyclean — 36 gpm inlet capacity — equipped with exclusive, automatic purge tip that will not plug

7" Cyclean — 120 gpm

12" Cyclean — 500 or 850 gpm

These stainless steel, pressure drop cleaning units are designed, constructed and applied by engineers responsible for a major part of all the pulp and paper dirt removal equipment operating in this country's mills.

Cyclean users report more effective removal of shives and specks, improved fibre hydration, fewer breaks, fewer wash-ups, increased wire life and significant increases in machine output.

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASS.

REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND, OREGON • ATLANTA 9, GEORGIA

Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

PAPER PEOPLE

H. B. Weis

G. B. Bonfield, Sr.

Packaging Corp. Names Vice Presidents

E. L. Stentz

Three new vice presidents were named to head the Eastern Central and Western paperboard operations of Packaging Corp. of America.

Henry B. Weis, of Quincy, Ill., was named vice president, paperboard division-western region; Gordon B. Bonfield, Sr., of Grand Rapids, Mich., vice president, paperboard division-central region; and E. L. Stentz, of Wadsworth, Ohio, vice president, paperboard division-eastern region.

Mr. Weis, a 24-year veteran in packaging and paperboard business, started with the former Central Fibre Products Co. in 1936 as a trainee at the Quincy mill, and rose to the position of vice president and general manager, Mill Division Group. He also was a corporate director of Central Fibre Products Co.

Mr. Bonfield, with 38 years of service in the paperboard and packaging field, formerly was a vice president of The American Box Board Co. In addition to his duties directing operations of the company's mills in Grand Rapids and Filer City, Mich., he has jurisdiction over a subsidiary firm, North American Timber Co.

Mr. Stentz, formerly general plant manager of the Rittman Mill operations of the former Ohio Boxboard Co., was with Ohio Boxboard since 1947.

Ecusta Paper Appoints Sales Service Manager

P. J. Pagano has been appointed sales service manager for the Ecusta Paper operation of Olin Mathieson Chemical Corp.

Mr. Pagano, who joined the company in 1945, will be responsible for the operation of Ecusta's sales service department. He most recently was an area sales manager for the corporation's International Division.

Technical Directors Appointed by Wrenn

John E. Watson has been named technical director for the Wrenn Paper Co. of Middletown, Ohio, and Virgil Hall, Jr., assistant technical director.

Mr. Watson, who has been administrative assistant to the vice president at the Mead Research Center in Chilicothe for four years, joined Mead in 1951, the year he received an M. S. degree in chemical engineering from the University of Tennessee.

Mr. Hall was employed as a chemist by Wrenn in 1951, a position he held until 1958 when he became supervisor of production control. He received his A. B. degree in chemistry from Miami University in 1949.

Westvaco Names Severance To New Post

Promotion of Arthur T. Severance, to the new post of administration manager, Multiwall Bag Division, was announced in New York for West Virginia Pulp and Paper by Victor S. Luke, manager of that division.

Mr. Severance joined Westvaco in 1951 at Mechanicville and eventually became head of the local mill's commercial analysis department. He was promoted to regional administration manager of the Multiwall segment in the New York office in 1958.

H. C. Hall

C-Z St. Helens Mill Names Resident Manager

Howard C. Hall has been promoted from assistant resident manager to resident manager of Crown Zellerbach's pulp and paper mill in St. Helens, Ore. He succeeds Raymond A. Dupuis who was recently named resident manager of the corporation's West Linn, Ore., mill.

A native of Eugene, Ore., Mr. Hall attended the University of Oregon and later the California Institute of Technology where he received his B.S. in chemical engineering. He joined Crown Zellerbach as a beater tester at Camas, Wash., in 1947, became assistant technical supervisor there in 1949, and pulp schedule coordinator in Camas in 1951. He was transferred to St. Helens as technical supervisor in 1955, became assistant resident manager in July 1959.

OPEN

for business... felts by Huyck

THE Huyck-Smyth Porosity Tester, being used above, is the *only* practical instrument available to measure porosity of running felts. This device . . .

- **determines when cleaning is needed**
- **evaluates performance of cleaning equipment and other machine components**
- **locates filled or plugged streaks**
- **improves water removal**
- **reduces steam consumption**

It is the most important advance in measuring on-machine felt performance since the development of the Huyckmeter.

Originated by T. C. Smyth of Crown Zellerbach and further developed by Huyck, the Huyck-Smyth Porosity Tester is now available to aid the entire paper industry.

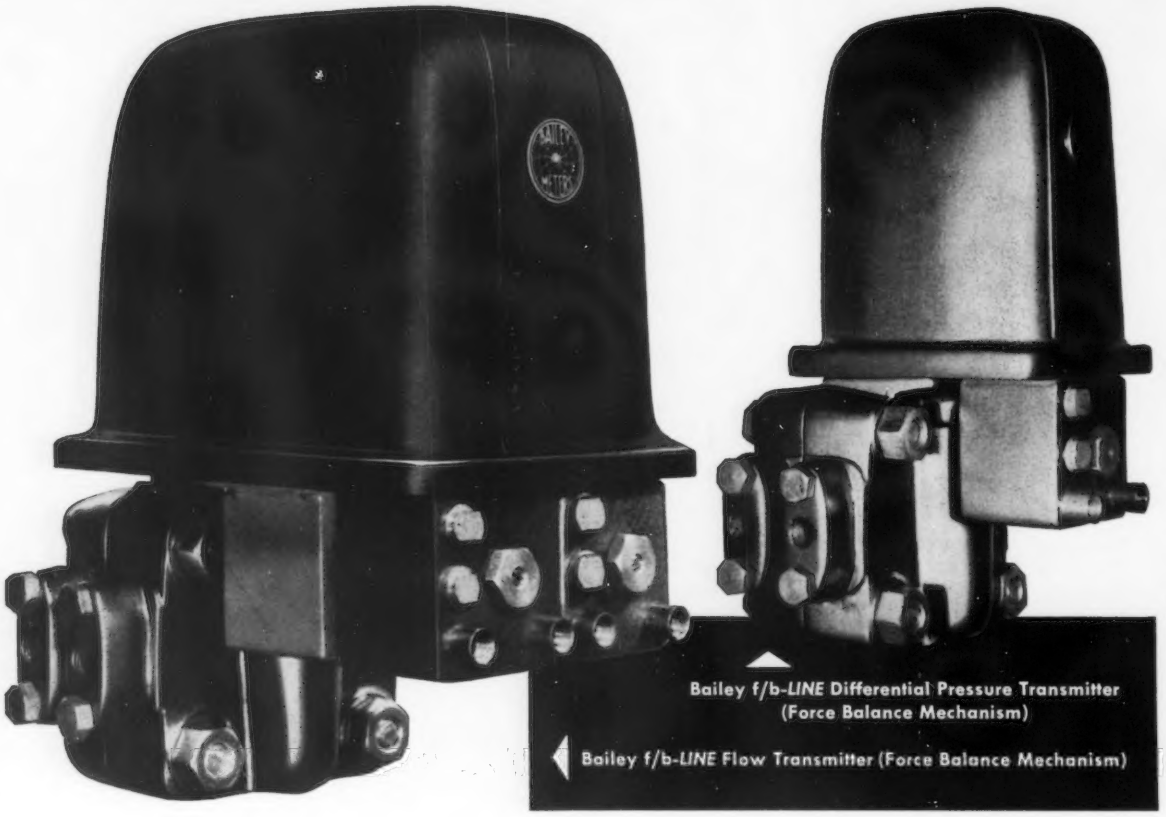
HUYCK FELTS

Huyck Felt Co.,
Rensselaer, N. Y.;
Aliceville, Ala.;
Division of F. C. Huyck & Sons
In Canada: Kenwood Mills Ltd.,
Arnprior, Ontario.

NEW

HUYCK FELTS ★ INDUSTRIAL FABRICS

FIRST IN QUALITY • FIRST IN SERVICE SINCE 1870



Bailey f/b-*LINE* Differential Pressure Transmitter (Force Balance Mechanism)

Bailey f/b-*LINE* Flow Transmitter (Force Balance Mechanism)

Two new Bailey *f/b-LINE* Transmitters

permit new accuracy in measuring flow and differential pressure

Pneumatically transmits rate of flow—or differential pressure—measurements to indicating, recording, and/or controlling equipment at remote stations. Transmitters consist of a diaphragm measuring mechanism and a force balance pneumatic transmitting unit.

APPLICATION

For steam, water, air, gases and other fluids producing differentials across primary elements from 0-2 in. H_2O to 0-2000 in. H_2O at maximum service pressure of 50, 1500, and 5000 psig.

FEATURES

Transmits a Signal Directly Proportional to Rate of Flow. Uses receiver with uniformly-graduated chart or scale. Eliminates need for external square-root extractors or characterizers.

10 to 1 Turndown. Differential range of each diaphragm measuring element may be changed by factor of 10 to 1; e.g., 0-20 in. H_2O diaphragm may also measure 0-2 in. H_2O.

Screwdriver Adjustments. Range and zero adjustments readily accessible. Range may be changed with screwdriver adjustment.

Overpressure Protection. Protects against full service pressure applied to either side of diaphragm.

Fast Response. No viscous dampers needed, so speed of response is very fast.

Corrosion Resistant. For maximum differentials between 20 and 2000" H_2O, all parts in contact with process fluid may be stainless steel. No sealing fluids or sealing diaphragm required.

Good Stability. Reset type boosters give good stability with high gain.

Versatile Mounting. May be mounted on process piping, wall, or separate mounting pipe using same bracket.

For additional information, call your local Bailey District Office, or write direct.

P46-1

PULP AND PAPER DIVISION

BAILEY METER COMPANY

1056 IVANHOE ROAD • CLEVELAND 10, OHIO

In Canada—Bailey Meter Company Limited, Montreal

Oxford Paper Executive Added To Board

Philip L. Hovey, vice president, manufacturing, of Oxford Paper Co., was elected a member of the board of directors of that company at its annual meeting.

Following his graduation from the Sheffield Scientific School of Yale in 1939 with a B.S. degree in industrial administration, Mr. Hovey went to the company's mills at Rumford, Me., and worked through all departments there and also worked in the West Carrollton, Ohio, mill. From 1941 to 1948 he was in the sales department in New York. In 1948 he returned to the New York manufacturing department and later served as mill manager of the West Carrollton mill.

In 1953 Mr. Hovey was made assistant vice president, manufacturing, with headquarters in the New York office and became vice president, manufacturing, in 1957.

Oxford Paper Co. also announced three new assignments in the sales department.

Thomas F. Nolan, Jr., formerly western sales manager, has been appointed director of western sales. In this capacity he will function as the company's director of Western sales operations for its three mills, at Rumford, Me., West Carrollton, Ohio, and Lawrence, Mass.

Kenneth V. Wolf, formerly Atlantic sales manager, has been appointed Eastern sales manager, in charge of the company's district sales offices in New England, Metropolitan New York, and the Middle Atlantic States.

C. Rickert Lewis, formerly Northeast sales manager, has been appointed assistant to Andrew M. McBurney, vice president, sales. His new duties will consist of staff responsibilities in assisting the vice president, sales, in general company sales operations.

Butturini Joins Riegel At Milford Division

The Riegel Paper Corp. has announced that Eugene Butturini, formerly of Mexico City, Mexico, has joined its specialty products division technical department at Milford, N. J.

An electrical engineer, he will be concerned with the development of papers used in electrical devices. He was graduated from the University of Bologna, Italy.

Before joining Riegel, Mr. Butturini was employed by Adamas S. A., manufacturer of glassine and special industrial papers, at Mexico City.

Alexander Calder, Jr.

H. D. Camp

Union Bag-Camp Shifts Officers

The Union Bag-Camp Paper Corp. has announced several changes in its top management.

Alexander Calder Jr., president, was designated chief executive officer.

He succeeds his father, Alexander Calder, who was elected honorary chairman. The elder Mr. Calder had been chairman and chief executive officer.

Hugh D. Camp, formerly executive vice president for finance, was elected chairman, James L. Camp, Jr., was named chairman of the executive committee. He had been vice chairman of the board.

The elder Mr. Calder joined Union Bag in 1913 as a salesman. He was elected a vice president and director in 1925 and president in 1931. He was president and chairman from 1943 to 1956, when he became chairman and chief executive officer.

The younger Mr. Calder joined the company in 1940. He was elected a director in 1948, vice president in 1949, executive vice president in 1952 and president in 1956.

The Camp brothers joined the company in 1956 following the merger of the Union Bag and Paper Corp. and the Camp Manufacturing Co. Hugh Camp had been president of Camp Manufacturing and James Camp was chairman.

Rayonier Names Albohn To Research Post

Arthur R. Albohn has been named assistant manager of Rayonier Incorporated's Eastern Research division at Whippany, N. J.

Mr. Albohn, who replaces J. P. Hollihan, joined Rayonier at Whippany in 1956 when the company's third research center went into operation there. He first served as film section supervisor, later becoming supervisor of the fiber section.

Prior to his work with Rayonier, Mr. Albohn was engaged in cellulose research studies at Goodyear Research and at Celanese Research.

Westvaco Assigns Jerman New Post

R. Earl Jerman has been appointed to the newly established position of warehouse and off-machine supervisor at West Virginia Pulp and Paper, Charleston, S. C. A resident of West Oak Forest, Jerman has been with West Virginia since 1937.

Erickson Retires; Boylon Named Vice President

Einar W. Erickson, vice president for manufacturing and construction, retires this month after 40 years with Crown Zellerbach.

F. O. Boylon, who has been serving as assistant vice president for manufacturing, succeeds Mr. Erickson.

Mr. Erickson, a native of Finland and a chemical engineering graduate of the University of Michigan, joined Crown Zellerbach in 1919 as chief chemist at Ocean Falls. He became assistant vice president, engineering and construction, in 1952, and vice president for manufacturing and construction in 1956.

Mr. Erickson will continue to work with Crown Zellerbach as a consultant.

Mr. Boylon is a native of Ada, Mich., and a graduate of the University of Michigan with a B.S. degree in mechanical engineering. He worked 14 years in the paper industry before joining Crown Zellerbach as paper machine superintendent at

Ladle up the Gravy!

Put your plant where over 22 million people spend over $21 billion a year

. . . in the Southeast Coastal 6!

Build your plant and profits where the trend is to spend—in the 22-million-plus market of the Southeast Coastal 6.

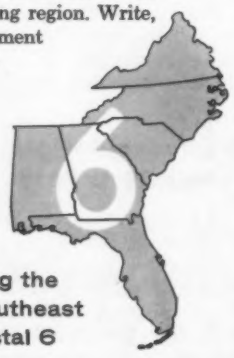
Check but a few of the statistical indicators and you'll see why this is the nation's growingest, buyingest opportunity land. Here you'll find retail sales exceeding $21 billion annually; 5 of the top 10 counties (including the first ranking county) in dollar retail sales per household; 31 of the 200 most populous U. S. counties; 31 of the first 200 counties in per capita effective buying income; 25 of the country's 200 biggest cities.

Add such advantages as these to the abundance of large-acreage plant sites, natural resources, manpower, and first class transportation facilities, and you won't want to overlook the Coastal 6. Get the full facts soon on this growing region. Write, wire or phone Coast Line's industrial development specialists for the exact information you want. All inquiries held in strict confidence.

Direct inquiries to:

R. P. JOBB, Assistant Vice-President
Dept. G-40—Atlantic Coast Line Railroad
Wilmington, North Carolina

ATLANTIC COAST LINE RAILROAD



...serving the Southeast Coastal 6

the Camas mill in 1948. In 1950 he was promoted to assistant resident manager of the Ocean Falls mill of Crown Zellerbach Canada and in 1953 returned to Camas as assistant resident manager. He became resident manager there in 1956, and was transferred to San Francisco as assistant vice president in June, 1959.

Oxford Names Ayer Asst. Treasurer

Oxford Paper Co. announced the promotion of B. Frederick Ayer of Rumford, Me., treasurer of Rumford Falls Power Co., to fill the position of assistant treasurer of Oxford Paper which has been vacant since November 24, 1959. Mr. Ayer will continue in the position of treasurer of Rumford Falls Power in addition to assuming his new duties with Oxford at the offices of that company in New York.

Mr. Ayer became associated with the Rumford Falls Power Co. in May 1942, as assistant treasurer and was promoted to treasurer in 1957.

W. W. Gordon

Standard Packaging Chooses Gen. Sales Mgr.

W. W. Gordon, who joined Standard Packaging Corp. a year ago as assistant to R. Carl Chandler, chairman of the board, has been appointed general sales manager of the Paper and Board Group with headquarters in New York.

In his new position, Mr. Gordon will be responsible for planning, directing and co-ordinating sales of pulp, fine paper and board produced by Standard's mill Group.

Mr. Gordon, previously held the position as assistant to the executive vice president of the St. Regis Paper Co., as well as general manager of the Panelyte Division of the company. Prior to that he was general sales manager of the United States Playing Card Co.

Charles Dozier, left, assistant superintendent at the Westfield River Paper Co.'s mill, Russell, Mass., is congratulated by company president, Paul F. Moore, upon his retirement after 43 year continuous service with the company. Started with the firm in 1916 Mr. Dozier held various responsible positions before becoming assistant superintendent in 1945. Co-workers and friends surprised him recently at a testimonial dinner and presented him with a wrist watch and a purse of money as a retirement gift.

Consolidated W.P.&P. Promotes Steele

Roger L. Steele has been appointed a research supervisor in the Research & Development Division of Consolidated Water Power & Paper Co.

Mr. Steele joined the company in 1954 as steam power engineer in the central engineering department. In 1958 he was appointed special projects leader at the company's Ahdawagam Division and was later named technical manager of the division.

I-P Announces Four Promotions

John H. Griffin, technical director of the Natchez mill of International Paper Co., has been promoted to assistant mill manager of the Springhill mill.

Jack F. Kilborn, senior research associate in I-P's research department in Mobile, Ala., replaces Mr. Griffin at the Natchez mill as technical director.

Richard D. Quina, assistant plant engineer at the I-P Mobile, Ala., mill, has been named plant engineer at Springhill to fill the vacancy created by the recent transfer of H. Minge Reed, Jr., Mr. Reed is now with the Southern Kraft Division headquarters in Mobile.

Charles D. McDonald has been advanced to technical director of the Georgetown mill. He will transfer from the company's mill in Moss Point, Miss., where he has worked since joining the company in 1940.

Robinson To Head Publishers' Paper

Samuel J. Robinson, vice president and general manager of Publishers' Paper Co. for the past 10 years, was named president at the annual meeting of the board of directors.

Mr. Robinson succeeds Norman Chandler, president of the Times-Mirror Co., as president of the important Times-Mirror subsidiary.

At the same meeting, Philip Chandler, executive vice president of the Times-Mirror Co., was elected chairman of the board of directors, and R. G. Adams, secretary of the Times-Mirror Co., was elected a vice president.

All five directors of the company were re-elected, including Norman Chandler, Philip Chandler, Mr. Robinson, Mr. Adams, Mark E. Peterson of the Deseret News, Salt Lake City.

Hinde & Dauch Names Public Relations Manager

Appointment of Robert D. Ackerman as advertising and public relations manager for the Hinde & Dauch Division, West Virginia Pulp and Paper, has been announced. Mr. Ackerman is responsible for the advertising, public relations and sales promotion activities for the division. He will make his headquarters at divisional offices in Sandusky, Ohio.

The Hinde & Dauch Division, one of the nation's leading producers of corrugated shipping boxes, operates 17 box plants coast to coast in major market areas.

Mr. Ackerman has served for the past four years as supervisor of several industrial advertising campaigns as a member of the advertising department at Timkin Roller Bearing Co., Canton, Ohio.

PAPER TRADE JOURNAL is always mailed on Friday and should be received in most parts of the country early in the week. If there seems to be undue delay in receiving your copy, we suggest that you write your local postmaster, with a copy to the postmaster at East Stroudsburg, Pa., where we mail, and a copy to us.

felt facts

PRODUCTION RECORDS BROKEN AGAIN WITH ALBANY FELTS!

PULP FELT SETS ALL-TIME RECORD... 80 tons per day!

The Actual CASE HISTORY

Naturally, we're proud of our close relationship with paper mills. It gives us the opportunity to work closely with them in the solution of their felt problems. This association pays-off for our customers—again and again!

For example, just recently a record was established in a paper-board mill in Delaware. A rugged Albany Pulp Felt on the Second Press of a Fourdrinier Machine making 9 point helped run up an all-time tonnage record for this machine of 80 tons per day!

25% SYNTHETICS

This felt was constructed in a special Albany Felt Design with 25% synthetic content. Used on the reverse second press with a brass top roll and rubber-covered bottom roll, it provided trouble-free operation from the minute it was installed. Furthermore . . .

IT BROKE ALL RECORDS FOR LONG LIFE- 16 days!

Just another example of how Albany Felt Company's careful attention to proper felt design, correct blending of fibers and close tolerances in manufacture pay-off in improved felt performance. This applies to other applications, too-fine papers, tissue grades and high-finish paperboard.

ASK YOUR ALBANY FELT SALES ENGINEER about a special presentation of these informative, full-color film strips: "Felt Manufacture" and "Felt Applications." He will be glad to arrange a showing at your convenience.

Talk it over with your Albany Felt Sales Engineer

AF ALBANY FELT COMPANY ALBANY, N.Y.

The World's Largest Manufacturer of Paper Machine Felts

NEWS OF CONVERTERS

Continental Can Names Devon Plant Manager

A. J. Civitello has been named manager of the Continental Can Co. flexible packaging plant in Devon, Pa. Mr. Civitello has been division production engineer and formerly was assistant Devon plant manager.

The company's Devon plant makes bags for such products as coffee, cookies, dog food, fertilizer and insecticides. It utilizes paper and paper laminations in combination with materials like Pliofilm, cellophane, foil and polyethylene. The plant is also exclusive supplier of disposable bags for the Electrolux vacuum cleaner. Printing facilities include gravure, flexographic and letterpress (in up to six colors).

Specialty Papers Installs New Press

A new eight-color Heavy-Duty Rotogravure Press was recently put into operation by The Specialty Papers Co. at its Dayton, Ohio, plant.

The press, manufactured by The Kidder Press Co. is equipped with electronic registration controls, semi-automatic splicing equipment, a unit for embossing in register, reversible printing stations for printing by the flexographic process, and extended dryers for printing on foil and transparent films.

Specialty Papers is a leading converter of flexible packaging materials, with mills at Dayton, Ohio, and San Francisco, Calif.

R. M. Koch

Waxed Paper Institute Elects Officers

Robert M. Koch, vice president and general manager, Zimmer Paper Products, Inc., Indianapolis, Ind., was elected chairman of the Waxed Paper Institute, Inc., for 1960 at the Institute's recent annual convention meeting held at Boca Raton, Fla.

The Institute board of directors elected Harold E. Pierce, sales manager of bakery packaging, Marathon, a division of American Can Co., Menasha, Wis., to the office of vice chairman for 1960.

Lloyd L. Fisher, manager, bakery packaging, Western-Waxide Division, Crown Zellerbach Corp., San Leandro, Calif., was chosen secretary-treasurer for the coming year. This position was formerly filled by Mr. Pierce.

We are preparing a list of persons who are serving the pulp and paper industry as consultants. If you are in this category, will you send us a note with your name and address and the field in which you specialize or are particularly qualified? We are anxious that our list be as complete as possible.

I-P Container Div. Shifts Three in Sales Department

The promotion of three executives to new positions within the sales department of the Container Division, International Paper Co., has been announced.

S. R. Van Horne, manager of the Chicago plant, has been named district sales manager for the Great Lakes area; J. R. Estes, manager, Kansas City plant, has been named district sales manager, Missouri Valley; R. D. Jollay, manager of the Wooster, Ohio, plant, has been named district sales manager, Ohio Valley.

These new assignments have been made to fill the vacancy created by the resignation of Stanley B. DeMian, formerly manager of Midwest regional sales for the division. Mr. DeMian is leaving the company to accept the presidency of the Pak-Rite Corrugated Box Co. of Chicago.

Dixon Box Plans To Double Facilities

Construction will be started immediately on a new plant for the Dixon Box Co. of Greenville, S. C., which will double the company's existing facilities.

The box company, organized in 1945, manufactures plain and printed paper folding boxes and supplies industry and retail outlets in the Southeast.

RODNEY HUNT®
SHAF-TITE® ROLLS
METAL ▪ RUBBER ▪ WOOD ▪ PLASTIC
RODNEY HUNT MACHINE CO., 10 MAPLE ST., ORANGE, MASS.
Exclusive U. S. Agents for FILLED CALENDER ROLLS made by David Bentley, Ltd., Manchester, England

THESE ADVANTAGES MAKE "BLH" YOUR BEST BUY FOR

HEAVY-DUTY AIR HANDLING

- **High efficiency over a broad range of operation** — ideal for supplying ventilation and air conditioning systems.
- **Stable performance** over the entire range of operation — dependable delivery.
- **Handles pressures up to and including Class IV applications.**
- **Capacities up to 500,000 cfm** and over — in closely graduated sizes to permit exact selection for the job.

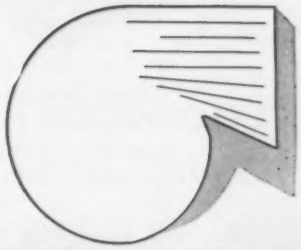
"Q" Factor* Features Available Only in Buffalo Designs

EFFICIENCY AT INLET

Cross-section of inlet, showing smooth half-circle passage into wheel formed by curved inlet bell and mating wheel flange. There are no flat spots to cause turbulence.

EFFICIENCY IN THE WHEEL

Showing deep, backward curve of blades in "BLH" wheel for smooth, quiet handling of air spun into the wheel in the direction of rotation. No waste turbulence.



EFFICIENCY THRU THE HOUSING

Not only is the "BLH" housing streamlined throughout, but its unique fared outlet delivers air to discharge duct with easy, gradual enlargement for best distribution and static conversion.

Write for new Bulletin F-201 for full details.

**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

BUFFALO FORGE COMPANY
Buffalo, New York
Buffalo Pumps Division • Buffalo, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING • AIR CLEANING • AIR TEMPERING • INDUCED DRAFT • EXHAUSTING
FORCED DRAFT • COOLING • HEATING • PRESSURE BLOWING

Steps in making a purchase

Open letter to suppliers who serve the paper and pulp industry

The six basic steps of making a sale have been analyzed and publicized until they are familiar to most of us:

1. Make contact with prospect
2. Arouse his interest
3. Create preference for your product
4. Submit proposal with terms, etc.
5. Close the order
6. Provide service, keep the business, get re-orders.

It seems to me that the same steps, or counterparts of them, are taken by mill men when they make a purchase.

The first step is to have some means of contact with potential suppliers. Advertisements in PAPER TRADE JOURNAL, the publication you are reading right now, provide one basic means of constant contact. Lockwood's Directory of the Paper and Allied Trades, provides another such contact.

But contact with potential suppliers is only a pre-requisite. A purchase doesn't really begin until a need is recognized. After that the buyer – the potential buyer – actively seeks information that will help him decide which type of product, and which size and model and make, will best meet the need.

It is at this stage that information in ads in a publication like PAPER TRADE JOURNAL is carefully studied. At this same stage Lockwood's Directory is used to identify suppliers. The purchaser usually wants to learn all he can about your product – and your competitor's product – *before* he alerts suppliers to the fact that he's actively in the market.

* * *

Among the thousands of mill men who will read this copy of PAPER TRADE JOURNAL this week there are some – probably hundreds – who are at the stage of actively searching the advertisements for product information that will help them decide which salesmen to call in.

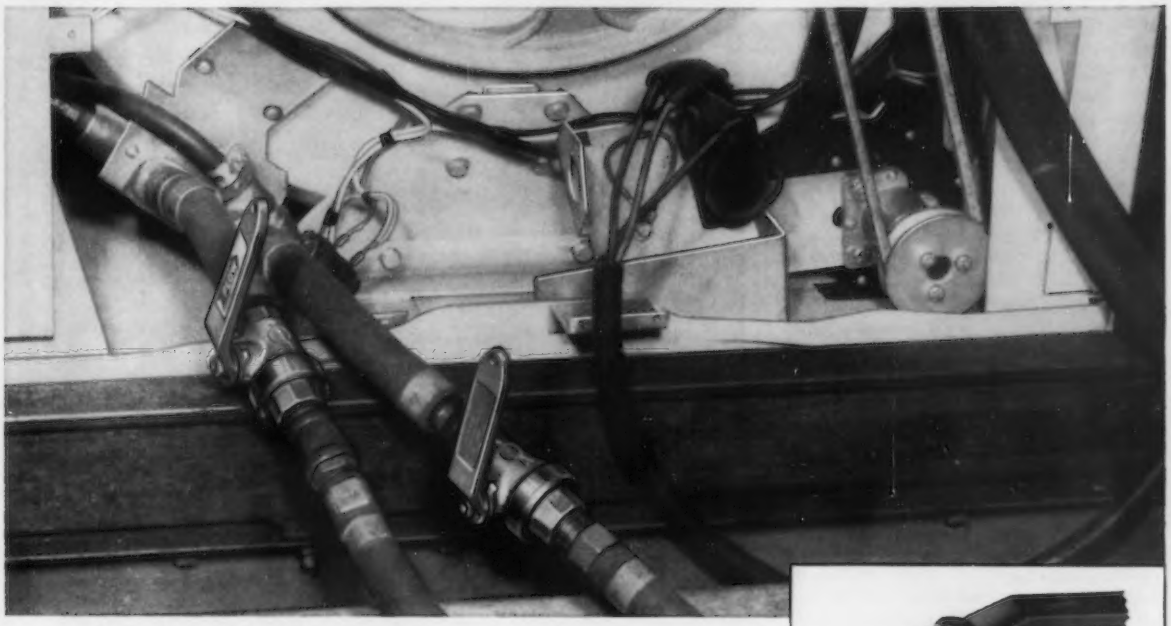
How much help your fellow reader gets from your company is something for you and your advertising department to think about seriously. Are your advertisements giving these *active searchers* the information about your product they are looking for?

George E. Lockwood PUBLISHER

PAPER TRADE JOURNAL

P.S. Your fellow readers of PAPER TRADE JOURNAL are your customers and prospects.

HUNDREDS OF THOUSANDS OF TURNS AND 2 YEARS LATER . . .



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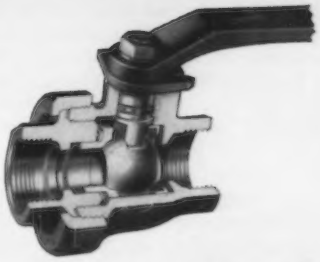

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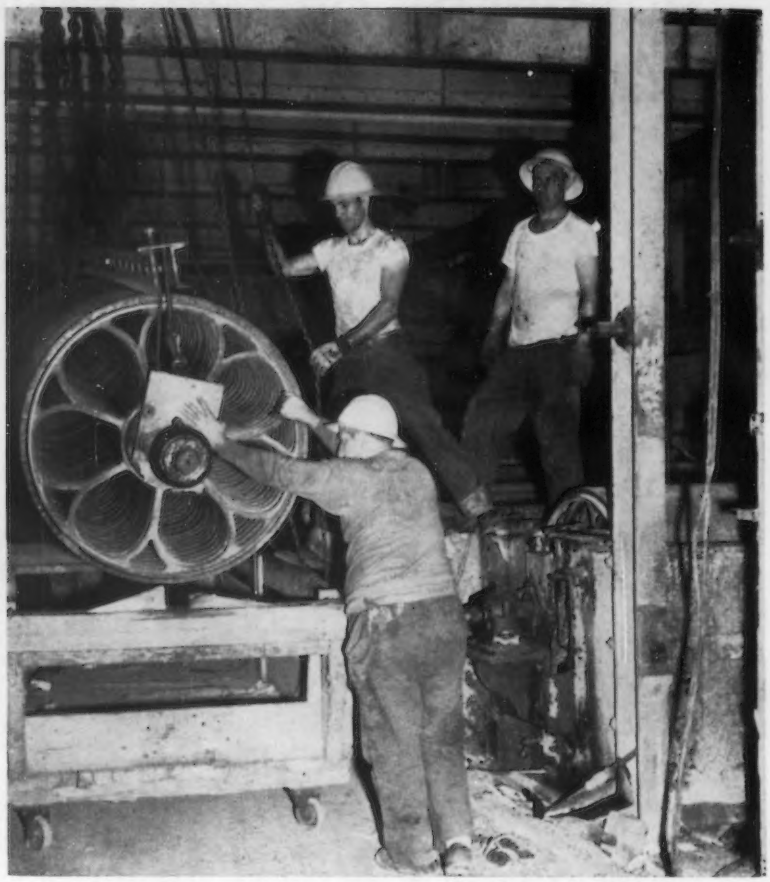


Removal of equipment for rebuilding. Parts such as this cylinder were expedited on a tight schedule to assure on-time start up.

"Rolling Modernization" Increases Production & Efficiency at Downingtown

George M. Wagner,
Manager of Plant Engineering,
Downingtown Paper Co.,
Downingtown, Pa.

As in many paper mills, we have found it impractical from the viewpoint of economics and customer relations to shut down our equipment on a long-term basis for major modernization programs. However, a very serious problem exists . . . for, as a medium size paperboard manufacturing company, we must minimize costs to keep our products competitive with others in the business . . . both smaller and larger. Because of the many kinds of paperboard we make "to order," the problem of maintaining competitive costs becomes increasingly difficult. If continual modernization to increase production and efficiency is not carried on, our costs quickly get out of line. This cannot be tolerated, nor can we afford to permit our productive equipment to be out of operation for any longer than absolutely necessary. Therefore, we plan our work for periodic, regularly scheduled down times which are of necessity held to the barest minimum. We are aided in this program through installation of carefully selected spare equipment, some of it installed parallel with our operating machines.

Over the past several years, a plan has been evolved for continued modernization which has permitted us to keep all three of our paper machines and related equipment up to date.

At the same time, basically nonproductive maintenance costs are kept at a minimum. Here at Downingtown, we refer to this program as "rolling modernization." It is made possible by a careful examination of every piece of equipment so that we do not get in a rut with repair work

when a new or more modern machine is more effective.

Modernizing No. 4

During 1957, we accomplished a complete rebuilding of our No. 2 paper mill which resulted in essentially a new mill (see PAPER TRADE JOURNAL, Nov. 18, 1958). As soon as these facilities were in operation, we started planning in detail, the modernization program for our No. 4 mill. This work was scheduled months in advance, but the critical changeover was accomplished during a one-week shutdown period in July 1959. A study quickly showed that there were three key areas where improvements would pay dividends. The first was the paper machine drive consisting of a troublesome steam turbine and mechanical silent chain drive. Without shutting down, a new turbine was installed in a more desirable location at the end of the drive shaft, and all was made ready to make the final tie-ins. Over a weekend, the piping connections were made and the drive coupling was installed; the old silent chain drive was disconnected and removed; and the new drive was ready for operation Monday morning. Thus, our first major problem was very successfully taken care of. Incidentally, the turbine which was removed, was subsequently rebuilt and installed in another mill, No. 3, where it was used to replace a very good but obsolete twin Corliss engine; but, this is another story . . . and another chapter in our story of rolling modernization.

Secondly, it was discovered that quite a few components of our No. 4 machine needed rebuilding and many press rolls and calender rolls were in need of reconditioning. The third area and perhaps the most important one was the necessity for improved and increased stock preparation facilities and the installation of a complete new, additional stock system for use as back liner or under liner as required. Incorporated into the program were plans to improve further the already fine quality and uniformity of DOPACO products.

Equipment Added

Other than installation of the new mechanical turbine drive, major paper machine work included installation of new stainless-steel vat flumes, replacement of all six machine stock screens, and rebuilding two suction rolls. Roll grinding was necessary on press and suction rolls. The calender stack was to be ground before shutdown to conserve manpower for use during the shutdown.

Equipment installed in the stock preparation area included an additional stock pulper, a new large stock refiner, new electric pumps, and a consistency regulator. Considerable piping, from fractional sizes to 12 inches, both stainless steel and carbon steel, was fabricated to provide a three-stock system.

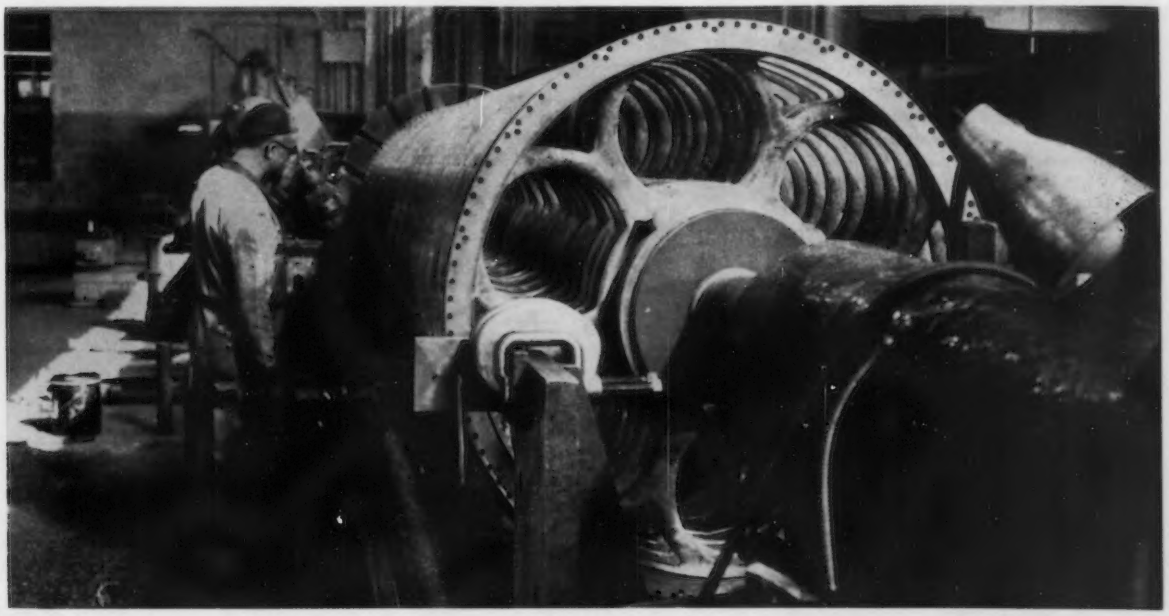
At the same time the building required modification and reinforcement, involving such things as moving steps, strengthening and fireproofing structural steel work and removing the outside wall. Modifications were also made to the system for conservation of fresh water and paper stock.

These jobs on the paper machine and in the stock preparation area required much prefabrication, preparation, planning and careful execution. The major part of this work was performed during the one week shut down.

The three areas of work constituted the program through which it was believed that the capacity of No. 4 machine would be increased approximately 15 per cent, that the quality and uniformity of the product would be improved, and that down time involved would not exceed normal requirements for inspection and repairs. Furthermore, the cost would be held within reasonable levels and would not exceed regular repair costs inordinately.

Complicated Logistics

If this program was to be accomplished within the required short length of time, it was evident that, despite our sizable and experienced maintenance and plant engineering staff, we would require additional help, especially in machine tool capacity for rebuilding certain components and for handling the necessary reconditioning of rolls in the machine room. Equipment was ordered many months prior to the July shutdown, and spare components were shipped to Layton-Greenfield, Inc., builders of paper machinery in Coatesville, Pa., for rebuilding. Ma-



Cylinder mold being rebuilt. Coordination between outside contractor and plant engineering group is essential.

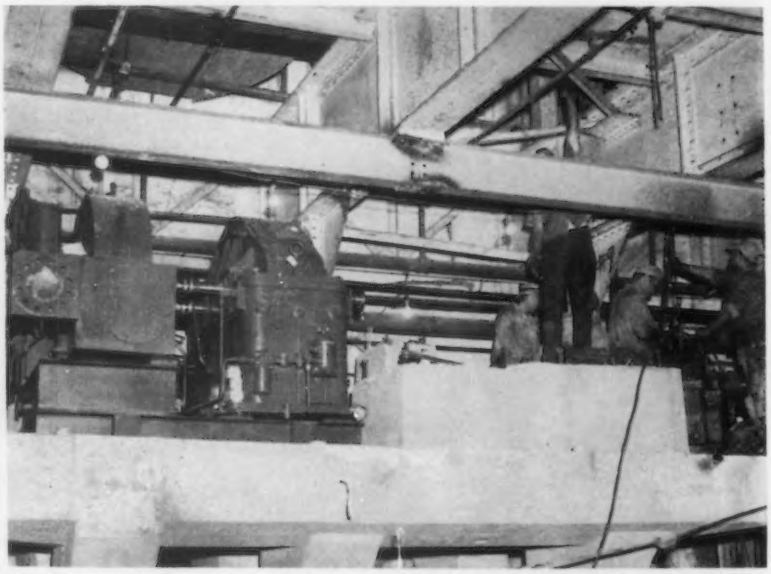
Mr. Wagner emphasizes that pick up and delivery is an important part of establishing contractor services—eliminating the need for crating and expensive handling and shipping.

terial arrival was carefully scheduled so that, as the foundations became available, the equipment could be installed in place, as far as possible, during production operation. Foundations for drives, motors, transmissions, pumps, and other equipment were all installed and ready to receive the components as they arrived. This involved some complicated location and logistic problems. In designing a new mill from scratch, ample space can be alloted for most desirable assembly of equipment. In a crowded situation present in an old mill, it was necessary to sandwich material in between that already in place. This required special design and special handling. Piping was prefabricated and installed, except for final tie ins. Machinery being built and prefabricated by our own crews and by Layton-Greenfield was made ready and either set in place or moved to a location from which it could be placed advantageously.

While all this was going on, our electrical department was installing the necessary equipment required in conjunction with the changes being made. The motors involved ranged from half horse power, 110 volts, to 400 horse power, wound rotor, 2300 volt. This, of course, required starters, wiring, and other auxiliaries. At the same time, a program was carried on to install "outside" purchased electrical power for part of this mill. Previous to this time, all power was generated by plant facilities but, because of our rolling modernization program, these plant facilities had become unbalanced, requiring greater quantities of electrical power than could be economically generated while still best utilizing exhaust steam from the power house turbo generators. This job was carried on in close conjunction with Philadelphia Electric Co., power suppliers, and Westinghouse Electric Corp., equipment suppliers. As a final adjunct to the plan, changes were incorporated to modify our water and waste disposal system for more effective use and for water and stock conservation.

Final Stages of the Program

Finally, the big day arrived and everyone took a well-deserved holiday on July 4. Early on the morning of July 5, all the many activities were coordinated to bring about the final changes needed to bring the program to fruition. The equipment which was to be reworked by outside contractors was removed and loaded on waiting trucks. In some cases, the trucks belonged to the contractors, and this greatly facilitated the work because, it relieved DOPACO personnel from the worry attendant with the planning and scheduling of contract carriers. Layton-Greenfield is an example, and we could load their truck and forget about the problem until the time when they returned the finished equipment on schedule. The plant personnel proceeded to make the many changes, taking advantage of all the preparation which had gone into the project. A very significant preparation now proved of great value. This was the alterations which had been made to the mill buildings for ease in handling the many pieces of very heavy and bulky equipment. Through a hole which had been cut in an outside wall came the pieces of machinery to be lowered down to the other floors through previously prepared apertures in the floor and through stairwells from which the stairs had been removed. As soon as this heavy rigging was completed, crews began to patch and replace the parts of the building which had been removed so that concrete would be ready for use at start-



Another typical problem. Foundations were poured well in advance and thoroughly cured so that speed reducer and turbine could be put in place prior to shut down.

up time. By working multiple crews which had been inflated with mill operating personnel (many of whom are well qualified mechanics) around the clock, the many tie ins were completed and, on the morning of the ninth day, the mill was ready to run. This is the period during which the benefit was reaped from the careful planning and scheduling that had taken place before.

Maintenance Economics

The pictures show several steps in the handling of this project, including the removal of equipment and rebuilding in the vendors shops. This brings up a very important point of maintenance economics. We have found that, frequently, it is possible to have work performed by outside organizations cheaper and better than when performed by our own people. Although we have many well-equipped shops and skilled mechanics ranging from millwrights to blacksmiths and utilitymen, because of costs, workload, machine availability, and other factors, it is frequently more desirable to have repairs or fabrication performed by outside people. Many jobs will be sent to these outside people for bids, and our plant maintenance department will bid against them. Sometimes the successful bidder will be from the outside, and sometimes from DOPACO. The bidding, of course, falls within the scope of classical economics and will be affected in DOPACO the same as with outsiders by such things as workload, available facilities, available skills, technical knowhow, etc. Our company has a rather complete cost accounting system which, however, is still being improved and is again a part of our rolling modernization. The cost figures that we have available can tell us what the cost would be to do any job and, with these figures, it is possible for us to make realistic bids in competition with outside contractors. Very recently, we installed machine cost accounting which should improve this still further.

The overall cost of the improvements on No. 4 machine resulted in an increase in productive capacity that has already surpassed our 15 per cent expectations so we believe now that, on the basis of cumulative improvements, we may realize an increased capacity of 20 per cent or more, with an increased capital investment of only 5 per cent. Naturally, we are happy with the results of our plant modernization program, a program that keeps the plant up to date through best utilization of scheduled down-time periods.

PJT NEW LITERATURE

The Profit Side of Your Ledger

Cites owner testimonials to illustrate the cost-saving profit-making potential of the D7 Series D, the D6 Series B and the D4 Series C. Form D004. Caterpillar Tractor Co., Peoria, Ill.

Manual on Sewage and Waste Treatment

Gives a comprehensive digest of processes and equipment engineered and produced by American Well Works for sewage and industrial waste treatment. Also shows installation pictures and views of their extensive plant. Manual 160. American Well Works, Aurora, Ill.

B-E-H Heat and Cold Insulations

Contains the full line of over 30 industrial insulations manufactured as well as properties and specifications for service from sub-zero up to 1900° F. Also provides a selection chart with illustrations of typical installations. Catalog for 1960. Baldwin-Ehret-Hill, Inc., 500 Breunig Ave., Trenton 2, N. J.

Buy Log of Low Voltage Equipment

Covers low-voltage distribution equipment and is designed to serve as a condensed buying catalog for G.E.'s distribution assemblies and circuit protective devices departments. GEC-1100B. Catalog. General Electric Co., Plainville, Conn.

Bailey Flow Transimitters

Presents selection table lists on range from 0-1 inch to 0-2000 inch H_2O, service pressures and weights of these linear flow transmitters. Bulletin P22-1. Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio.

Explosion-proof Illuminators

Covers the features and sizes of these illuminators which give a bright evenly diffused light over the entire length of the gauge glass. UL and CSA approved. Data Sheet 375. Jerguson Gage & Valve Co., 80 Adams St., Burlington, Mass.

Guide to Silicones and Their Uses

Provides an up-to-the-minute summary of the forms, properties and applications of Dow Corning silicones. Tables graphs and photographs are included in this engineering guide. 16p Brochure. Dow Corning Corp., Midland, Mich.

Hydromatics Rating Guide

Lists the relative ability of metals, plastics and synthetic rubbers used in the manufacture of Flo-Ball valves to resist the corrosive effects of 390 different fluids encountered in industry. Hydromatics, Inc., Livingston, N. J.

Individualized Trap Strainers

Contains case histories of how Multi-Metal solved individual strainer problems. Also lists features of these strainers and tells how to determine the screen area. Multi-Metal Wire Cloth Co., Inc., 1350 Garrison Ave., New York 59, N.Y.

Ross Psychrometric Chart

Based on international critical tables and Keenan steam tables. Available from J. O. Ross Engineering, a division of Midland-Ross Corp., 730 Third Ave., New York 17, N.Y.

Roller Chains and Sprockets

Keydexed for easy reference, the book lists over 2,000 types and sizes of stock roller chains and sprockets including standard and double pitch power transmission chains, a large selection of conveyor chains and attachments, and one of industry's most complete line of sprockets. Book 2757. Link-Belt Co., Dept. PR, Prudential Plaza, Chicago 1, Ill.

One Man Crew Operation

Engineering Analysis Form 421-1 asks the questions that will provide the true handling and specification data necessary for the complete picture of your dock operation and proper selection of materials handling equipment to suit your need. Analysis 153 describes a system where each employee works alone as a checker-stripper and loader for increased productivity and more flexible operation. Lewis-Shepard Products, Inc., Dept. R10-21, 125 Walnut St., Watertown, Mass.

Isotropic Clupak Paper Nears Commercial Production

An interview with Hewitt S. Welsh, vice president and technical director of Clupak, Inc., brings us up-to-date on progress in extensible paper including an important new development, high stretch in all directions.

Q. *Mr. Welsh, Clupak extensible paper was first announced as having gone into commercial production in February 1958. What progress has been made since that time?*

A. The only Clupak extensible paper being used then was a small amount in pilot plant quantities. Now, it is gaining acceptance in a great variety of products, and shows signs of taking over the multiwall bag market. Of the total multiwall bag production, approximately 12 per cent is now being made of Clupak extensible paper. Clupak licensees are also picking up many new customers in the field of general purpose wrapping papers. By using extensible paper with its extra toughness, manufacturers have been able to accomplish substantial reductions in the weight of multiwall bags and other paper products, in some cases up to 25 per cent. Clupak extensible paper is proving to be of increasing importance in asphalt impregnated papers, and its use with polyethylene as a moisture barrier is coming along. In low temperatures, a regular kraft and asphalt combination tend to crack easily and break open due to the brittleness of the asphalt and to a large extent the brittleness of the paper. The Clupak paper maintains good flexibility and toughness even at reduced temperatures. When used in combination with polyethylene, the toughness of the film is reinforced by the toughness of the paper, or vice versa. But when standard kraft is used, the two materials do not supplement each other.

Q. *How many companies and how many machines are now producing Clupak extensible paper?*

A. We have eleven licensee companies in production, eight in the U. S., two in Canada, and one in Sweden. Another company in the U. S. is just about ready to begin manufacturing Clupak paper. Our licensees represent about 65 per cent of the total unbleached kraft paper production in this country. Clupak extensible units are now installed on nine machines in the U. S., and generally speaking the size of these machines runs about 200 inches trim, although one is considerably smaller. They represent an aggregate of about 2000 inches of wire width and 25 per cent of unbleached kraft paper production. Basis weights produced range from 35 pounds to 100 pounds, but are primarily in the 40-70 pound range.

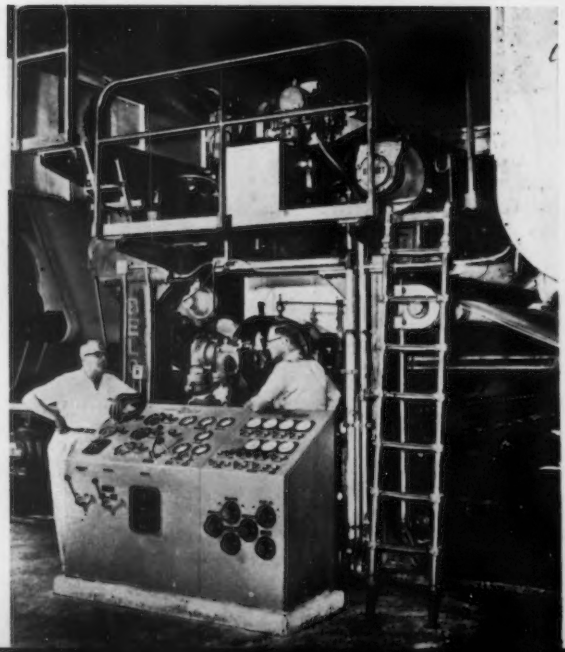
Q. *Have there been any changes in the extensible unit since the first commercial unit went into production?*

A. There have been no major modifications, but we have cut off a lot of gingerbread that was needed on the early production units to cope with unforeseen variables. For instance rubber blanket construction was modified. At first with an unbacked blanket, stretch of up to four feet was encountered. Now the blanket has been modified so that stretching of the blanket itself amounts to only a few inches, and internal construction of the blanket has been improved. This simplified machine design by eliminating take-up travel.

Q. *You say that Clupak paper already has a sizeable proportion of the multiwall bag market. How far do you expect extensible paper to go in taking over this market?*

A. I believe there is no question that

Uses of extensible paper →



PRODUCTION of Clupak paper. Extensible unit in operation on 212 inch machine at International Paper Co., Camden, Ark.

all kraft products are going to be made in the future with a higher degree of energy absorption. Some other process or method of producing high energy absorption in paper may appear, but if the gods smile on us, Clupak Inc's method of inducing this property will continue to gain in acceptance. By providing higher energy absorption in paper the manufacturer provides higher quality. Clupak's process is a step towards combining higher quality with the paper industry's high speed production.

Q. *In what other markets or types of products do you expect Clupak extensible paper, or process to gain wide acceptance?*

A. There are very good possibilities in liner board, tape, greaseproof, glassine, cellophane, parchment, twisting and many specialty papers. In particular, we are putting a lot of effort into linerboard development where the extensible paper would eliminate cracking, and in glassine paper where Clupak's process would increase tear resistance and toughness without disturbing the paper's present properties. We have made extensible glassine paper in pilot plant quantities and put it through some full scale commercial converting processes. Incidentally, Clupak, Inc., is spending at the rate of over a quarter million dollars a year on research and development. We have also licensed several other companies or organizations for periods of three months to a year to do research and development work.

Q. *The present Clupak extensible unit produces a paper with the ability to stretch mostly in the machine direction, but less in cross direction. We understand you are developing a means of producing isotropic extensible paper, a sheet that has high stretch in any direction. How is this progressing?*

A. We are somewhere between pilot plant and commercial operation. The process has been under development for several years now and we have been able to make isotropic extensible paper for some time. The design of the equipment is now being worked out. There were several possible arrangements of the equipment that have to be considered and tested. To say the least it is no longer a laboratory curiosity.

Q. *How is isotropic Clupak paper produced?*

A. As you know, the Clupak unit now used commercially to produce extensible paper compacts the web in the machine direction, while in a moist condition, between a rubber blanket and a highly polished heated cylinder. To produce a sheet that is extensible equally in all directions we have developed a new method of controlling the recoiling of the rubber blanket. Basically, the sheet is compacted on a bias, first in one direction, then the other. Two extensible paper units are required, one for each compaction of the sheet. (PAPER TRADE JOURNAL'S reporter was shown at this point a model of a unit used to compact the web on a bias. This was an early model and does not necessarily represent the production unit. It consisted of a frame, rubber blanket, carrying rolls and nip rolls where the blanket compacts the web. The nip rolls are mounted diagonally to the direction of sheet travel, and it is at this point that compaction on a bias takes place. In actual production, this unit would be followed by another with nip rolls canted in the opposite direction. As might be expected, the web shrinks considerably in cross direction as well as machine direction.)

Q. *Do you expect this new development to make existing Clupak extensible units obsolete?*

A. No! High stretch isotropic Clupak paper is another step towards better utilization of papermaking techniques, but none of us can predict exactly where it will find application. There are a host of possibilities, but looking back to 1954 when final pilot plant work was begun on the now commercial system, I am inclined to think that the present system is not yet in danger of obsolescence.

Today's Methods of Washing Sulphite Pulp in the Scandinavian Countries

Several factors have prompted these countries to evaporate and burn spent sulphite liquor. The author also discusses the most advanced methods of separating and recovering the spent liquor from the pulp.

Pentti Salanterä,
Assistant Editor,
Finnish Paper and Timber,
Helsinki, Finland

Separating sulphite pulp from its spent cooking liquor in the blow tank was originally just a washing problem in Scandinavia. Attention was not paid to the quality of the outflowing spent liquor. The principal consideration was to get the pulp as clean as possible for its subsequent treatment. At this phase, the treatment of the pulp after cooking was very similar at all mills. After cooking and gassing, the stock was blown or taken to the blow tank from which it was removed at a 10-12 per cent consistency by an elevator for further treatment. The blow tanks were then of open construction, with bottoms of perforated bricks.

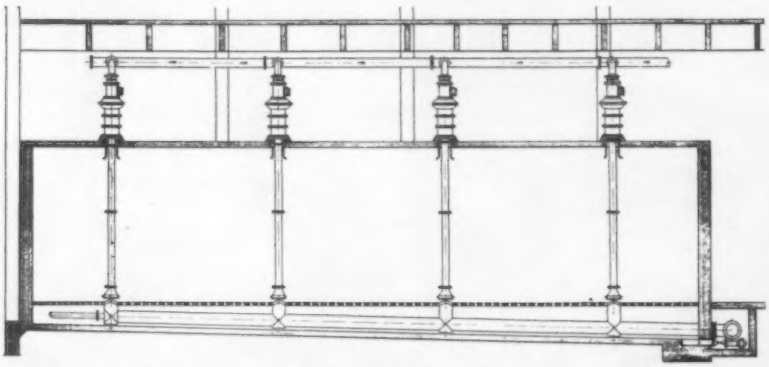
In these earlier times water pollution was not a big problem as the production units were small. Nor was heat economy the consideration it is now and, as limestone was cheap, there was no inducement to construct the necessary equipment for the proper separation and treatment of the spent liquor.

It may be said that the first encouragement to change the old system was the establishment of sulphite alcohol plants with their high distillation heat costs. Nearly every sulphite pulp mill in Scandinavia has had its own alcohol plant. At the same time, thoughts of heat economy started to grow. The Scandinavian mills have relatively high thermal energy costs owing to their dependance on imported fuels. Every attempt has consequently been made to reduce the consumption of thermal energy both directly and through a more effective process heat recovery. The organic substances in spent liquor had at the same time begun to attract interest as a possible fuel. A direct consequence was that Scandinavia was the first area to embark upon the evaporation and burning of spent sulphite liquor. With the initial difficulties solved, this procedure has been adopted by the majority of the leading Scandinavian mills.

It is only recently, with the increase of production units and the spread of bleaching, that water pollution problems have arisen to give some mills the final impetus to adopt systems for the evaporation and burning of spent liquor.

It is indicated in Scandinavia that the improved heat economy gained by the burning of spent liquor is worth the initial investment cost. The economics naturally improve with increased efficiency of the spent liquor separation. Efficiency refers here to a high dry-substance yield in the removed spent liquor, combined with the lowest possible dilution of the liquor. It is against this background that in the development of methods of recovering spent liquor, great attention has been paid to this so-called displacement stage of the separation process. As the base chemical to be recovered is not of importance, attention must be concentrated on degree of the dilution of the spent liquor.

The three most advanced methods used in Scandinavian mills of recovering spent sulphite liquor are now reviewed.



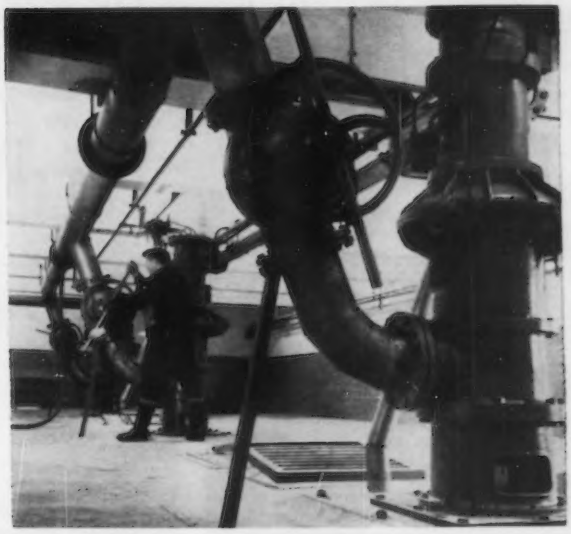
Side elevation of a blow pit with four flushing apparatus.

In-the-Digester Replacement

In this method weak spent liquor obtained from a previous washing phase is pumped into the top of the digester at the end of the cooking and gas relief. At the same time, hot strong spent liquor is removed from the bottom of the digester. It is then possible to recover heat at a high energy level from this outrunning spent liquor.

Displacement is continued until the outrunning liquor reaches a predetermined solids content, after which the digester is emptied. The emptying is done either by using compressed air or pumping the digester empty by

◄ Lindström flushing apparatus viewed from operating level of blow pits at G. A. Serlachius Oy Mänttä sulphite pulp mill.



Another scene of the above installation, but emphasizing the flushing-water pipe connections to the apparatus. ►

means of diluted spent liquor. The stock thus obtained is led in a continuous flow to the washing stage, for which washing filters are used. One mill has experimented successfully with pressure washers made by Rauma-Repola. Pure filter washing is used in Finland only by Rauma-Repola mill, but this particular mill employs the sodium base sulphite process. These washers, too, are Rauma-Repola pressure washers and have given excellent results.

A point governing the quality of the equipment employed for the recovery of spent liquor is the danger of $CaSO_4$ crystallizing. Specifically for this reason, pure filter washing alone is not employed in any Scandinavian calcium bisulphite mill for spent liquor separation.

Inside the blow pit. Flushing heads of the Linström apparatus, nozzles, and perforated bottom are clearly visible.

Blow Pit Displacement

After being shown that a correctly designed blow pit gives better displacement and washing results than the digester, several mills have adopted the following procedure.

At the end of the cook, the digester charge is blown, forced out of the digester by compressed air or just allowed to run into the blow tank, flushed out by a fairly large quantity of strong spent liquor. Blowdown is often associated with heat recovery, either by a spray condenser or by pumping in to the blow pit enough cooled spent liquor to bring the temperature of the stock down to 194-212°F.

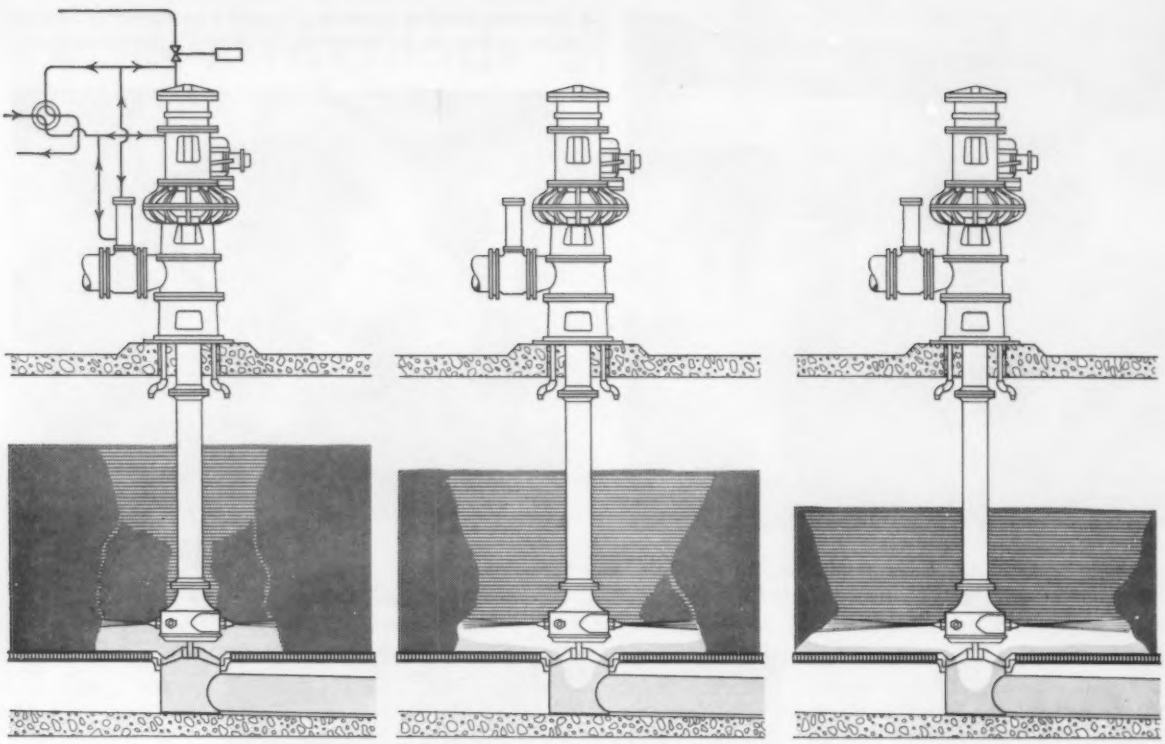
This cooled strong liquor had been obtained during the preceding displacement by diverting the required amount of hot, strong liquor from the initial outcoming flow through a heat exchanger and into storage tank. It has been noted too, that, if the consistency of the stock to be blown down is lowered, a more even distribution of stock is obtained and displacement in blow pit improves.

The blow pits are rectangular and relatively high, often lined with stainless steel plates. The bottom consists of perforated stainless steel plates.

Displacement is often performed with diluted spent liquor followed by the washing, i.e. a second displacement with hot water. The diluted spent liquor obtained during this second phase is saved for the next blow tank displacement.

The stock is evacuated from the blow pit automatically by so-called Lindstrom flushing apparatus. This equipment is manufactured in Sweden by Ab. A. Ekstrom's Maskinaffär, Stockhold, and in Finland by Rauma-Repola Oy, Rauma. A similar apparatus is produced by Leje & Thune, Stockholm.

According to Ekstrom, the idea of using flushing outfits for emptying the blow pits is not a new one. Already a number of constructions have been used all aiming at the same goal, a simpler sturdier outfit with a minimum of labor for handling and upkeep. The introduction of the flushing apparatus has meant a big step ahead of earlier constructions with



How the Lindström apparatus empties the blow pit. The first figure diagrams the flushing and pressure-water connections.

scrapers and transport belts of more or less perfected designs, not to talk of the primitive methods using manual work to smaller or greater extent.

The upper part of the Lindstrom apparatus is a pressure cylinder with vertically moving plunger. To this plunger an acidproof flushing water pipe is connected, which is in its turn connected to a flushing head provided with nozzles. The flushing head also serves as a bottom valve. By means of a 15 kw, 1500 r.p.m. electric motor driving worm gear, this pipe is given a slow rotation.

The flushing water enters an inlet chamber at a rate varying between 260-530 g.p.m. and passes through the rotating water pipe to the flushing head and the nozzles.

When starting operation, the flushing-water valve is opened manually or automatically and water under pressure is fed into the lower part of the pressure cylinder. At the same time the flushing water pipe with its head is raised to the working position, opening the bottom valve and the motor is automatically started.

When the pit is empty, the flushing-water flow is cut off and the flushing-water pipe is lowered by feeding pressure water to the upper part of the cylinder. Simultaneously the head closes the bottom outlet and the motor is stopped.

The Lindstrom construction with plunger control for raising and lowering the flushing head contains the advantage that heat tensions on the flushing water pipe are automatically compensated. This means that the hot pulp cannot damage the apparatus, as the flushing-water pipe is fixed in one end only, while the plunger in the upper end can move freely. This accounts for the fact that units with flushing water pipes having lengths of up to 19-26 feet are in trouble-free use. All parts in contact with pulp are constructed of stainless steel.

Where Lindstrom flushing apparatuses are used the blow pits can be totally covered and in that way gas is prevented from penetrating into the buildings.

In a mill producing strong sulphite pulp a Lindstrom flushing apparatus was placed in an old existing bin far from ideally shaped. A production of 4-6 tons per hour of flushed pulp was obtained. The pulp in the bin had a consistency of 15-19 per cent and was flushed at 1.5-3 per cent.

A variation of the method of displacement with spent liquor in the blow pit is direct displacement and washing with hot or cold water. However, the displacement result is not considered to be as good.

Continuous Diffusers

Some mills, especially in Finland, have carried out both pilot plant and large-scale experiments and studies of continuous diffusers. An apparatus of this kind would be an excellent solution to the problem of $CaSO_4$ crystallization. The apparatus has not yet been developed on a commercial scale, but that should be achieved farily soon. When a continuous diffuser is used, the digester is emptied into the blow tank from which stock is pumped in a steady flow in a continuous diffuser. It is not necessary to install any knotters before the diffuser which is the case when using washing filters.

As not a single apparatus is yet in permanent mill operation, it is too early to draw definite conclusions on the use of equipment of this kind.

Mention must be made, finally, of experiments in Sweden with Davenport presses. The aim has been to develop a press which would produce stock with a sufficiently high consistency. This is a necessary condition if the press is to compete with the methods mentioned above. This developmental work is still in progress.

Economic Review And Forecast

W. LeRoy Neubrech,
Assistant Director,
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Forest Products Division, BDSA,
U. S. Department of Commerce

Demand for paper and board continued good in the first two months of 1960 as mill production of most grades rose above the record-breaking levels of 1959.

Industry executives currently express both confidence and optimism regarding the outlook for 1960, but show some tendency to moderate the more bullish forecasts made late last year. Although the degree of optimism varies among individual industry leaders, the consensus as of mid-March appeared to be somewhat more conservative than the projection of 36 million tons, or increase of 6 per cent over 1959, made by the Department of Commerce last December.

Early last year, the majority of economists did not expect 1959 paper and board production to exceed 1958 by more than 4 or 5 per cent. The actual gain was 10.5 per cent, which brought 1959 production to a new all-time high of 34.0 million tons. It is encouraging that for 1960 the industry expects both demand and output to exceed 1959 and that it is well prepared to meet enlarged domestic and export market demands.

New Capacity Planned

In view of the additional mill capacity under way or planned, there should be no problems in filling the rising demand expected in the next two or three years. In addition to installing new paper machine capacity, the industry has been, and continues to be, aggressive in modernizing existing plants through rebuilding old paper machines, replacing other older machinery with more modern and efficient equipment, and changing manufacturing procedures to gain increased productivity and improve quality. The industry has scheduled for the three-year period 1960-62 about 3.3 million tons of increased paper and board machine capacity (historic basis), principally through purchase of new machines but also through improvements to existing machines.

Research, which has top priority in almost every pulp, paper and paperboard company, continues to be enlarged in scope to encompass all phases of technical, new product and marketing research. In the area of markets, a number of companies have established separate international departments to emphasize overseas sales and/or foreign subsidiary manufacturing. Several U. S. manufacturers have acquired a minority interest in existing overseas pulp, paper, paperboard or converting plants in recent months. The current trend toward development of regional trading blocs in several areas of the world appears to be a motivating factor in this direction. U. S. exports of pulp, paper, board and allied products to world markets were valued at $337 million in 1959 compared with $304 million in 1958, a trend which is expected to continue.

For many years U. S. exports of paper, paperboard and converted products have ranged around two to three per cent of total domestic production of paper and board on a tonnage basis. To illustrate, in 1939, when domestic production of paper and board totaled 13.5 million tons, exports were approximately 248,000 tons; in 1949, with domestic production at 20.3 million tons, exports increased to 372,000 tons; in 1959, with output at 34.0 million tons, exports reached a new all-time high of 912,000 tons. Certainly an export market nearing a million tons a year assumes added importance when the trend over many years has been almost continuously upward. In fact, during the past 10-year period exports have shown an average annual gain of about 50,000 tons.

U. S. exports of wood pulp show a similar strong upward pattern, particularly in the last decade. Exports in 1939 amounted to 140,000 tons compared with a production of 7.0 million tons. By 1959 exports had reached an all-time high of 653,000 tons as compared with domestic production of 24.3 million tons. The average annual increase in exports over the past 10 years has been better than 50,000 tons.

Reached New High Level

The U. S. pulp, paper and board industry operated at a new high level during the year 1959. Pulpwood consumption totaled 38.9 million tons, an increase of 10.5 per cent over 1958. Wood pulp production, at 24.3 million tons, increased 11.3 per cent; wood pulp imports, 2.4 million tons, were up 16.1 per cent and exports, amounting to 653,000 tons, were up 26.8 per cent over 1958. The total new supply of wood pulp available to domestic consuming industries reached 26.1 million tons, or 11.7 per cent greater than in the previous year.

Wood pulp consumption by paper and board mills stood at 25.2 million tons, a gain of 11.9 per cent, and at nonpaper mills reached 922,000 tons, an increase of 9.5 per cent over 1958.

During periods of strong demand, consumption of market pulp by board mills usually runs at a relatively high level. In 1959 these mills consumed 2.7 million tons of purchased market pulp, 4.7 per cent more than in 1958. Consumption of wastepaper, which increases in periods of strong markets for paper and board, stood at 9.2 million tons, up 5.9 per cent over 1958.

Paper and board production set new records, exceeding 1958 levels by the following percentages: Paper production, 14.9 million tons, up 10.3 per cent; paperboard, 15.7 million tons, up 11.1 per cent; construction paper and board, 3.3 million tons, up 8.1 per cent; and wet machine board, 143,000 tons, up 11.7 per cent.

Although the market for practically every grade of paper and board was exceedingly good in 1959, keen competition among manufacturers continued as expanded capacity made it possible to meet demands without difficulty. As a consequence, prices as reported by the Bureau of Labor Statistics remained substantially steady throughout the year, relatively small changes from 1958 levels being shown. The only noteworthy price advance was in wastepaper, the BLS price index for which averaged 112.5 (1947-49 = 100) in 1959 compared with an average price of 88.3 for 1958. The 1959 wastepaper price average was approximately the same as in 1956, when a similarly strong market existed.

Based on the March "Pulp, Paper and Board Industry Report" released January 16, 1960.

Caliper Profiler Used as Control Instrument at W. Va. Mill

N. A. Ciannamea,
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Paper mills have to meet the ever increasing challenge of progress made in the allied fields of converting and printing. Improved and faster equipment, along with increased automation used in the handling and treatment of papers for various end uses, demands the production of quality papers. To help produce quality papers, paper mills must constantly search for better means and methods of control.

The Foxboro caliper profiler is an instrument which contributes to the overall paper quality improvement program. By having a handy profile of the sheet caliper, the paper maker now can readily corr ct those factors which influence the caliper of the sheet.

A uniform caliper sheet will not only reduce the number of complaints and rejections from customers to whom even caliper across the sheet is important, but also will provide the paper manufacturer with many benefits in his own operation. With more even rolls due to better caliper, there will be less rejection for soft ends. There will be less tendency for wrinkling or dusting on the cutters. Finishers would do less turning of reams to even up the skid level. Production people would have better insight into the regrinding operations of the calender stacks.

Development

As our quality control program for the Mechanicville mill progressed, we became very much interested in obtaining an instrument for giving caliper profiles. Several manufacturers of gauges and calipers were contacted. After finding out that there was nothing on the market to serve our purpose, we turned the matter over to our Instrument Department for their consideration.

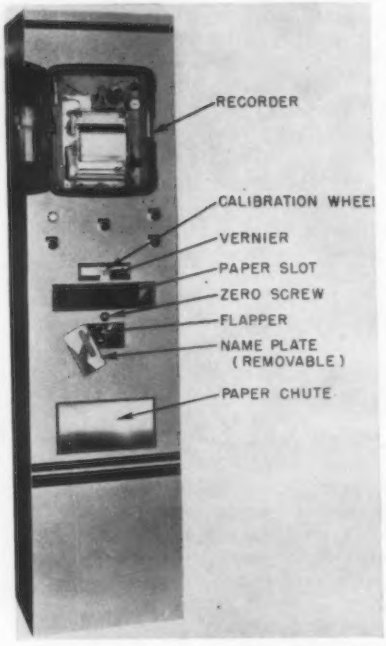
In early 1956, our Instrument Department suggested to the Foxboro Co. that they develop a caliper profiler. By late 1956, Foxboro contacted the Mechanicville mill through means of a survey sheet on the needs of the paper industry for the development of a sheet caliper profiler. The instrument would look the same as their beta ray sheet weight profiler. We readily reaffirmed our interest in the caliper profiler and offered to help in the evaluation of the unit when developed. In February 1958 Foxboro introduced the new caliper profiler.

Soon thereafter the unit was sent to us for our evaluation. Some improvements have been added to the unit as a result of our study. The caliper profiler is now considered to be a very accurate and reliable instrument.

Description of Instrument

The caliper profiler measures and records variations in the thickness of sheet materials. It consists of three basic elements mounted in a Foxboro two-instrument cabinet.

a. Caliper measuring system



Caliper profiler gives continuous chart record of sheet caliper. The unit handles single sheets or multiple layers.

b. Pull through mechanism

c. Strip chart caliper recorder.

The standard profiler is designed to accommodate a strip of paper up to 0.120 inch in thickness and 8 to 10 inches in width. The instrument records variations from —0.0020 to +0.0020 inch of the thickness at which the instrument is set. It continuously measures a spot about 0.600 inch in diameter (conforming to TAPPI standard T411-m-44) as the sheet moves through the profiler.

Caliper Measuring System

The measurement of the caliper or thickness of the sheet is obtained by passing the sheet between an anvil and sensing button. The latter is allowed to move to conform to the caliper variations of the sheet. The sensing button (also referred to as the lower anvil) acts on the flapper of a flapper-nozzle arrangement in a pneumatic transmitter, which provides an air signal to the recorder in proportion to caliper variations.

The reference anvil is adjusted by means of a micrometer dial (calibrated wheel) which is marked in ten-thousandths of inches. With a sample inserted between the anvils, the micrometer dial will read out the exact caliper of the sheet when the recording pen is at 0 (center chart). The anvil loading pressure is set at 7-9 p.s.i. to conform to TAPPI Std. T411-m-44.

Pull-through Mechanism

The pull-through mechanism, or paper feed, consists of a pair of motor driven pull rolls, which draw the sheet through the profiler at a rate proportioned to the gear size used. The feed is self-steering and will accommodate sheets up to 10 inches wide. A chute delivers the profiled sheet back into the bin at the bottom of the cabinet from which it is easily removed for disposal or for further testing. Single sheets or multiple layers can be fed through the profiler.

Strip Chart Recorder

The recorder pen draws a profile of variations in caliper as the paper progresses between the anvils. The

chart is calibrated in ten thousandths of an inch from —20 to +20. The maximum deviation is thus ±0.002 inch.

The chart speed is synchronized with the paper speed—such as 2.4 inches of chart per minute to 24 inches of paper per minute. Each minor division (1/10 inch) then represents 1 inch of paper. The first 2-3/16 inches of paper is used in setting-up on the profiler and is not recorded.

Accuracy

Feelers, covering a range from 0.003 inch to 0.024 inch which includes the range for all our papers at Mechanicville were sent to the Gurley Instrument Co., Troy, N. Y. for finer measurements. Average caliper of feelers were recorded to the nearest hundred-thousandths (0.00001) of an inch.

These standard feelers were inserted into the Foxboro caliper profiler and our regular laboratory caliper tester for comparative measurements. Readings were taken to the nearest five hundred-thousandths of an inch. It was found that the profiler gives accurate results and that the deviations lie within those tolerances specified by TAPPI Std. T411-m-44.

Correlation

Using single sheets—Sample strips of paper taken across the machine and representing a thickness range of 0.003 inch to 0.017 inch were measured on both the Foxboro profiler and the regular laboratory caliper tester. Readings with the regular caliper tester were taken at every inch spacing along the sheet. Numerous tests showed the correlation between the two instruments to be very good and the caliper could be predicted from any one instrument in terms of the other with the same degree of accuracy. Chart I represents a typical correlation found between the profiler and the regular caliper tester. Table I gives the correlation data which were obtained on different sample runs. As can be expected, the correlation coefficient on some of the runs are low because these samples were of nearly uniform caliper.

Using Multiple Sheets—It is common practice in our Mechanicville mill to use a layer of four sheets to establish the thickness on our lightweight grades—30 lbs. through 70 lbs. (25 × 38 — 500). The caliper on four sheets will give a better average of caliper fluctuation than single sheets which exaggerate random localized thick and thin spots. Also,

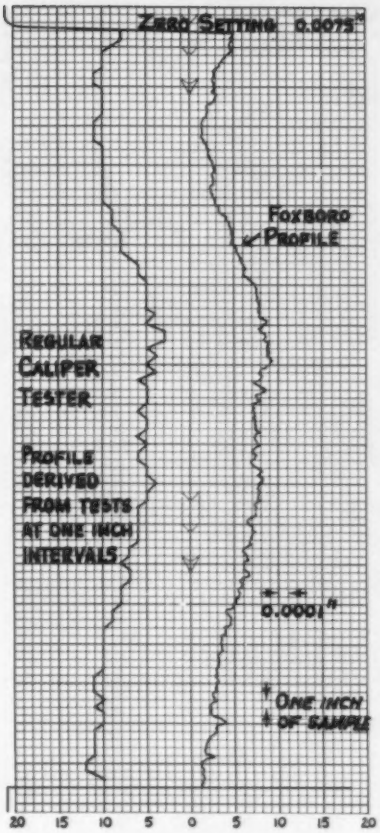

ZERO SETTING 0.0075"
FOXBORO PROFILE
REGULAR CALIPER TESTER
PROFILE DERIVED FROM TESTS AT ONE INCH INTERVALS
0.0001"
* ONE INCH
# OF SAMPLE
20 15 10 5 0 5 10 15 20

CHART I

the profile on four sheets of lightweight papers gives a clearer and better picture of the true caliper variations.

Excellent correlation was obtained between the profiler and the regular caliper tester on all tests with multiple sheets. Chart II shows such a correlation on a test run between the Foxboro profiler and regular caliper tester. This chart gives the profiles obtained on the single sheets as compared to the combination of the four sheets. Table II gives the correlation data which were obtained from the profiles shown in Chart II. It can be seen that the average caliper and the expected variations from each instrument is essentially the same.

Reproducibility

The test results of the instrument are reproducible day to day, as can be clearly seen on Chart III. These profiles were made three days apart on the same samples. The peaks and vales coincide quite well in each of the two examples presented.

The caliper profiler is very easily standardized. Drifting from its zero point is very slight, even over a two day period. The resetting operation is very simple.

Quality Control

We have switched our thickness testing in the control laboratory from our regular caliper tester to the caliper profiler on all our grades. Instead of recording the average caliper test made on four or eight sections across the sheet with the former caliper tester, we now simply pick out the high and low values from the profile, along with the overall average. The overall average can be accurately obtained without computations by visual judging. In time we will use the high and low (range) values to establish throw-out limits on caliper. Thus, X & R charts on limits can be used.

The profile, as obtained on each reel of paper turned up, is sent to

TABLE I

CORRELATION OF PROFILER AND REGULAR CALIPER TESTER

Single Sheets

Run No.	Dependant Variable Y	Correlation Formula	No. of Readings (N)	Correlation Coefficient (r)	Standard Deviation (σ)	Average Caliper (Mils)
1	Profiler	Y=1.30+0.59X	99	0.67	0.07	3.15
	Lab Tester	Y=0.76+0.77X	99	0.67	0.07	3.13
2	Profiler	Y=3.10+0.38X	108	0.36	0.09	5.07
	Lab Tester	Y=1.98+0.59X	108	0.36	0.11	5.03
3	Profiler	Y=2.20+0.59X	124	0.55	0.07	5.07
	Lab Tester	Y=2.45+0.51X	124	0.55	0.07	4.99
4	Profiler	Y=3.74+0.38X	95	0.53	0.07	6.04
	Lab Tester	Y=1.68+0.73X	95	0.53	0.09	6.04
5	Profiler	Y=0.10+0.99X	95	0.97	0.06	8.02
	Lab Tester	Y=0.51+0.94X	95	0.97	0.06	8.00
6	Profiler	Y=1.40+0.93X	96	0.83	0.18	17.48
	Lab Tester	Y=4.69+0.74X	96	0.83	0.17	17.56

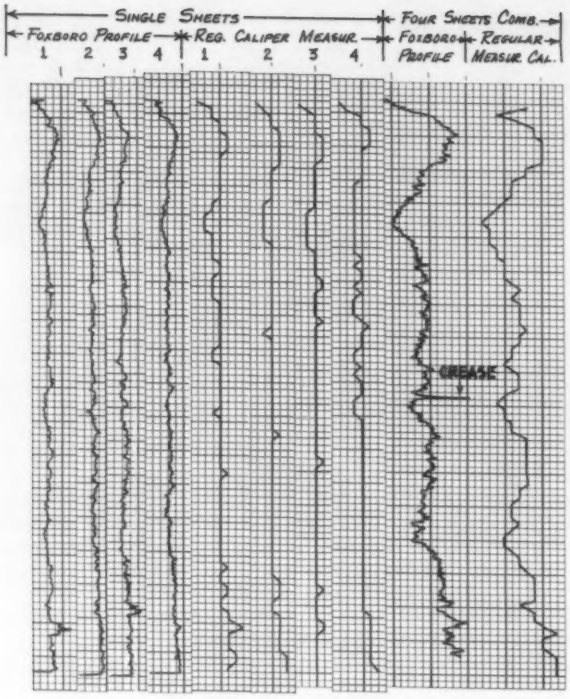


CHART 2

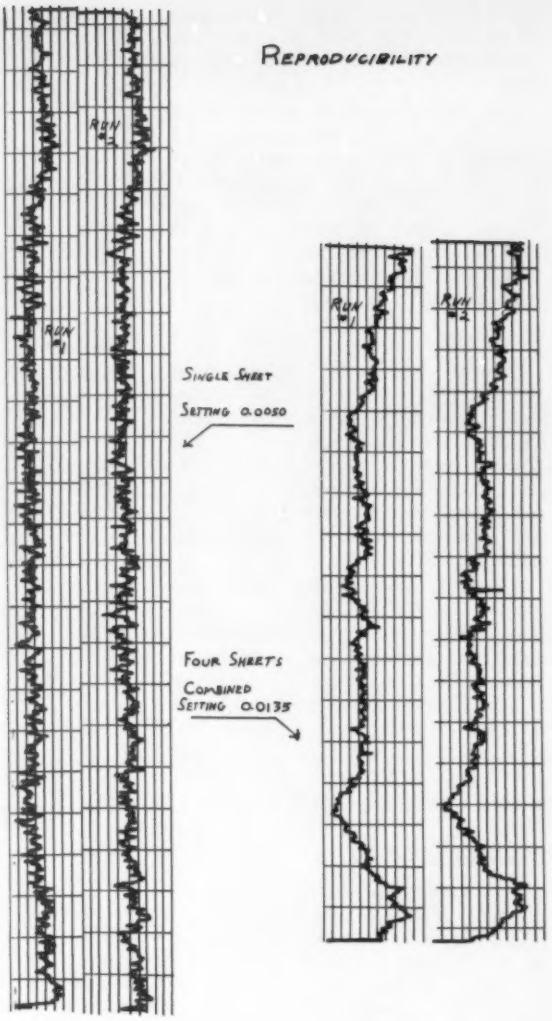


CHART 3 ►

the machine runner for his inspection. The laboratory testers and machine runners find the profiles to be easy to read and to be very meaningful.

Quality Improvement

Some improvement in caliper uniformity has been noticed since we started to use the Foxboro caliper profiler. When used in conjunction with a basis weight profiler and the recorded moisture tests across the reel, the variations in the caliper can be easily traced to uneven weight distribution, uneven moisture distribution, uneven calender pressures or improper calender crown. The troublesome areas can be pinpointed to within an inch on the machine deckle because of the simple profile chart scale.

We have found the profiler to be most useful in analyzing customer complaints which relate to certain defects such as: uneven draw, ridges, and uneven finish. Also, we have to rely solely on the profiler to provide a product of uniform caliper.

TABLE II

CORRELATION OF PROFILER AND REGULAR CALIPER TESTER
Single Sheets as Compared to Four Sheets

Strip No.	Dependant Variable Y	Correlation Formula	No. of Readings (N)	Correlation Coefficient (r)	Standard Deviation (σ)	Average Caliper (Mils)
1	Profiler	Y=0.43+0.89X	85	0.65	0.07	3.54
	Lab Tester	Y=1.86+0.48X	85	0.65	0.05	3.46
2	Profiler	Y=0.65+0.83X	85	0.76	0.04	3.56
	Lab Tester	Y=1.25+0.68X	85	0.76	0.04	3.51
3	Profiler	Y=1.65+0.48X	85	0.58	0.05	3.53
	Lab Tester	Y=1.18+0.70X	85	0.58	0.05	3.51
4	Profiler	Y=0.13+0.98X	85	0.67	0.06	3.53
	Lab Tester	Y=1.96+0.45X	85	0.67	0.04	3.49
Four Strips Combined	Profiler	Y=1.56+0.90X	85	0.79	0.14	13.72
	Lab Tester	Y=3.90+0.70X	85	0.79	0.12	13.70

More Instruments Needed

The basis weight profiler, and now the caliper profiler are up front in the parade of automatic instruments which must be developed to meet the demands of our industry. Better test methods will help to produce both a more economical product and a higher quality product. That day is not too far away when smoothness, porosity and moisture profile instruments, to mention a few, will be added to our present list. The instrument companies will develop these units only if we, in the paper industry, make them aware of our needs and desires.

Something Can be Done About the Finishing Department—IV

Quality Control with Broke Reduction Offers Savings in Fine Paper Finishing

Methods of controlling quality and reducing production of defective paper are discussed. Elimination of the discarding of good paper with bad is stressed. The need for development of more off-quality detection equipment is pointed out.

Methods by which good control of quality is maintained contribute more to the profit obtained by a fine paper mill than any other single function. Control of quality can be extremely costly in wages as is well known where 100 per cent hand sorting is carried out. However, this cost is less than half the value of the salable paper that is very often returned to the beaters with the defective paper. Slackness in inspection on the other hand can cause large claims and loss of high grade sales which, of course, reduces profit.

Excessive Cost of Quality Control

First, let us explore the excess cost of ordinary control of quality in our hypothetical 300-ton mill where 210 tons are finished in sheets and the normal broke loss is 25 per cent and 90 tons are finished in shipping rolls with a broke loss of five per cent. The necessary trim loss on sheets averages seven per cent, thus the remaining 18 per cent of salable paper production is "returned to the beaters" in the broke boxes together with the shavings and defective paper. The necessary trim loss on shipping rolls applies only to the rewound rolls and is approximately four per cent of 20 tons. Therefore, five per cent of 20 tons and one per cent of 20 tons is salable paper "returned to beaters" in the company of shavings and defective paper. If the actual shavings and defective paper returned to the beaters is carefully sorted out and weighed, only 20 per cent of the total will be found; the rest is salable paper. Therefore, for the sample mill, the total loss of *salable* paper amounts to 33.2 tons per day. The loss of profit can amount to $4,312.00 per day or $1,292,600.00 per year.

Large Savings from Small Reduction

The most important contribution which can be made towards reducing broke loss is, of course, the reduction of defective paper production by **(1) Paper Machine Crews and (2) Finishing Department Crews.**

The pressure to reduce broke on each of these departments is never as heavy as to increase production and rightly so, because a good production crew will also be a good quality crew and vice versa. However, it is also apparent that more research should be applied to the inspection of quality on the paper machine. Some companies are applying some pressure on research in this direction, but it still lags behind the research efforts to reduce consumption of high cost fibers, fillers and dyes. One company is classifying each roll as certified or not, depending upon the number of tagged defective spots in it. Of the progress in developing detection equipment, we can say that some companies are trying out mechanical means of controlling moisture, profile, holes and even wet end break lost time, but the equipment is not yet as reliable as is needed. However, the object of this article is only to stress the importance of this matter. If a two per cent reduction of the defective paper manufactured in our hypothetical mill is obtained, the profit gain would be approximately $2,688.00 per day or $816,400.00 per year.

Saleable Paper Discarded With Defective

Another way to reduce the startling loss of profit is to develop methods of removal of defective paper only. Experience with fan sorting indicates that this method not only depends entirely upon the human element and hence, is extremely wasteful when the sorter throws out 20 sheets of which only one or two are defective. It is, however, an improvement upon *overlooking* meth-

"Comprehensive, accurate detailed crew records of defective paper production is the best tool that a mill can use to control paper quality and reduce broke."

Modern Methods of Mechanical Pulp Manufacture

This book comprehensively covers all aspects of groundwood pulp production. The author, K. H. Klemm, has a broad knowledge of groundwood manufacturing methods and has been associated with groundwood mills on both sides of the Atlantic. Price: $5.00.

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"More research is needed on the application of quality control equipment on the paper machine. There is some equipment now available to do this, but not enough or sufficiently reliable."

ods where whole skid loads of paper are "returned to the beaters" because of some oil spots or dirt found irregularly through the top two or three reams. The big waste occurs in the carelessly-supervised *overlooking*, fan sorting and hand sorting where the sorter finds it easier to throw away 10 sheets than to separate the one sheet having the defect, or even whole 54 x 72 lifts of paper because a defect appears in one corner. Possibly this condition is most common at the layboy of the sheet cutter. It also occurs when the defectively-sealed reams are thrown in the broke box instead of being resealed.

Improvements in Quality Control Methods

Probably an impression has been created that all we can do is criticize the common methods of quality control. To this, in some measure, we admit. However, in a small way we desire to suggest certain known improvements which have been effective. One of these improvements which has produced surprising results, is the introduction of the simple practice of "inspection before doing." This means that every foreman trains every operator to reject or set aside for action with the one responsible, every roll or lift of paper which is delivered to him that contains defects. This sounds very impractical and it is, for the first few days, until the persons responsible begin to realize that the workers at the next operation are not going to accept poor workmanship, or cover up for their mistakes. It will not take long for the machine tender to realize that he will be charged with every roll with soft spots, rough edges, or corrugations that the sheet cutter operator finds. This is because the sheet cutter operator knows also that the trimmer operator is not going to accept lifts of paper with defects in them which have to be thrown into the broke box instead of credited to him for calculating his bonus.

Charge Broke to Dept. Responsible

Another method of reducing the loss of paper is to charge the department responsible for the defects with the cost of sheet cutting and sorting in addition to the loss of profit. It is quality control through the pocketbook, when the crew responsible for the defects loses production and possibly bonus wage payment.

Accurate Reports Essential

This leads us up to the main point. It is very evident in all the mills where control of quality is a costly operation, that comprehensive, accurate, detailed crew records of defective paper production will be the best tool the supervisory staff can use to control profit loss. A trimmer line boss can do something about a careless operator if he has "the goods" on him. A sheet cutter boss can really straighten out the operator who continually produces more corrugations, leaves more splices, or fails to break out wet rolls if he has reports which point at one operator. Of course, this tool is even more useful in the hands of the superintendent. The latter can not only pick out the foreman who is responsible but often equipment which is not maintained properly.

Profit Potential $ Half Million

There will be little contradiction if the statement is made here that very little detailed information is known in most mills about what and exactly who is responsible for every ton of broke that is produced. This is amazing when it is pointed out that each ton of broke probably represents $100 completely lost and that in the mill we are talking about, there are 57 tons (wasted salable paper plus defective production) being produced every day the mill operates. If 20 people were employed to eliminate 20 tons per day at a cost of $640.00, it appears that there would be a profit gain of $1,460.00 per day or $438,000.00 per year.

"In the average mill there is very little detailed information as to what or who is definitely responsible for every ton of broke that is produced."

PJT NEWS OF SUPPLIERS

BUCKEYE SEMINAR ON PAPER PULPS—Participants included (clockwise, l. to r.): J. C. Parsell, R. D. McPheters, J. P. Lewis Co.; D. F. Maskey, T. A. Feazel, C. Schenker, Buckeye Cellulose Corp.; S. I. Kukolich, Fitchburg Paper Co.; F. H. Schulte, Buckeye; J. C. Gallatin, Strathmore Paper Co.; R. Kolaschke, Bulkley, Dunton Pulp Co.; C. M. Connor, Hamilton Paper Co.; T. S. Harris, Buckeye; F. C. Keeney, Knowlton Bros.

Buckeye Cellulose Corp. sponsored a round-table discussion of specifications for pulps of the future which highlighted a recent two-day conference for paper industry technical personnel.

Preceding the round-table, the group attending the discussion toured Buckeye's Foley and Memphis plants, and its Memphis technical laboratories. The conference, which also included several papers by Buckeye research personnel, was the first of a series designed to promote closer understanding of the common objectives of pulp consumers and Buckeye.

Manning, Maxwell & Moore, Inc., has formed a Gauge and Instrument Division and a Valve Division.

Philip T. Tryon has been named general manager for the Gauge and Instrument Division and Clyde E. Dephouse general manager for the Valve Division. Mr. Tryon was formerly a plant manager and Mr. Dephouse manager of industrial planning.

The two operating divisions were formed to accelerate the company's growth in the several major industries that their products serve.

Hercules Powder Co. has announced the following appointments in its Imperial Color Chemical & Paper department.

Alfred E. Van Wirt as assistant general manager; Nathan W. Putnam as assistant general manager-director of Pigment Color sales; Laurence R. Sherman as manager of the Pigment Color division.

E. F. Houghton & Co. has opened a new plant at 54 Tanforan Avenue, South San Francisco, to handle its increasing West Coast business. Industrial oils and chemicals formerly manufactured at Houghton's plant at 1500 Davidson Avenue, San Francisco, are now being supplied from the new facility.

Equipment newly installed includes provision for sulphonation, saponification, compounding, esterification and condensation reactions. Capacity has been increased more than 50 per cent over the former plant.

The new plant is located on a three-acre plot and includes 30,000 sq. feet of manufacturing space, a new office building, control laboratory and 10,000 sq. ft. of outdoor storage area.

Houghton serves West Coast industry from Southern California where it maintains a warehouse in Los Angeles, and throughout the Bay area, and north to Portland, Seattle and Vancouver. Its staff of technically trained field representatives are under the direction of John Bermingham, Western sales manager. The plant manager is A. S. Horwitz.

Allis-Chalmers Industries Group announces appointment of Robert L. Halstead as manager of the Milwaukee district. Mr. Halsted succeeds A. P. Bowman, who has been transferred to North Central regional headquarters in Chicago as manager of Industrial Equipment Division sales.

Eaton Manufacturing Co., Cleveland, Ohio, has announced new general managers for the Marion Forge and Foundry divisions.

Paul W. Olson, formerly general manager of the Foundry Division in Vassar, Mich., for the past five years, has been appointed to a similar position at the Marion Forge Division in Marion, Ohio, succeeding T. A. Moretti who has been transferred to special assignments at the corporate level.

George R. Frye, formerly factory manager of the Foundry Division, has been promoted to general manager succeeding Mr. Olson. The changes are effective immediately.

H. W. Lange

E. F. Scherr

Western Precipitation Division of Joy Manufacturing Co. with headquarters in San Francisco, has promoted Howard W. Lange to manager of the Western territory.

Eugene F. Scherr was named manager of the Midwest territory.

Mr. Lange has served in the West for Western Precipitation for many years and is well acquainted with industry throughout the area.

With 15 years service in the Chicago office Mr. Scherr is well known in industry throughout the midwest. A graduate engineer, he will be in charge of all company operations for dust and fume control equipment.

Western Precipitation is the leading manufacturer of air pollution control products, making seven different basic types designed to con-

trol smoke, dust, and fumes in any type of industry. Western Precipitation recently became a division of Joy Manufacturing Co., Pittsburgh.

Midland-Ross Corp. has appointed Theodore F. Loughry to the newly created post of manager of foreign operations.

Mr. Loughry will be headquartered here and will act on a corporate level to coordinate all Midland-Ross' foreign activities. He will also coordinate the flow of technical information between foreign personnel and the corporation's various divisions.

An employee of 36 years service with the Surface Combustion Corp., which was acquired by Midland-Ross last year, Mr. Loughry has been manager of foreign activities for Surface since 1951. Prior to that he was in charge of the gas production division of the Surface sales department. He managed Surface's New York office for eight years before World War II.

Catalin Corp. of America has named Howard Wood as a sales engineer in its Resins division.

Mr. Wood, a graduate of Fordham University with a B.S. degree in chemistry, will operate from Catalin's New York headquarters covering parts of the New England and Middle Atlantic states. He had previous experience selling fats and edible oils.

Catalin sells a wide-range of resins for such applications as textile and leather finishing, paper treating, rubber vulcanization, brake linings, insulation materials and industrial and decorative laminates.

Bauer Bros. Co., Springfield, Ohio, announces a change of address for Sam Crocker, Jr., of the company's southern sales division. His new address is 15 Lakeside, Pensacola, Fla.

Sam Crocker, Jr. D. E. Mayo

Manchester Machine Co. of Middletown, Ohio, has appointed Donald E. Mayo engineering and service manager for the Northeastern region.

Mr. Mayo, a graduate engineer, has had over 10 years of direct experience in papermaking machinery. He was plant engineer with Stevens Paper Mills, Westfield, Mass., for three years and spent six years in the engineering department of Rice Barton Co. at Worcester, Mass. He came to Manchester Machine in 1957 as a field engineer. Mr. Mayo will have his headquarters in Springfield, Mass.

The company makes complete machines of the fourdrinier and cylinder types as well as component parts, such as suction rolls and presses, dryers, reels, calenders and winders.

Food Machinery and Chemical Corp. has announced the appointment of Walter J. Blair as Vertical Pump Product sales manager, Peerless Pump, Hydrodynamics Division.

In his new position, Mr. Blair will be in charge of planning and supervising the sales activities for the complete line of vertical pumps, including the well known Deepwell Turbine, Hi-Lift and Hydro-Line models manufactured by Peerless.

Imperial Color Chemical and Paper Corp., Glens Falls, New York, announces that S. L. Karpeles retired March 31 after 38 years in the chemical pigment color industry.

Mr. Karpeles started his employment with Imperial in 1935 as direc-

Announcing

an important new development for quality control measurement

AMES MODEL AG7

Accu-Flow* Air Gage Recorder

A permanent record of continuous measurements can be made in magnifications of 1750 to 1—3500 to 1—and 17,500 to 1.
The AG7 provides a completely impersonal measurement record that can be used both as a controlling device and as a means of furnishing visible "proof of precision" to buyers of the measured products. Send for free ACCU-FLOW folder.

*Trademark of B. C. Ames Co.

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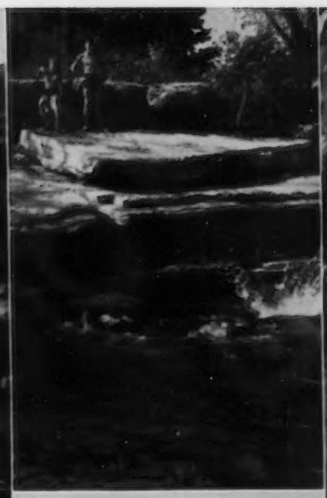
B.C. AMES CO.

55 Ames Street, Waltham 54, Mass.

Canadian Representative—H. C. Burton Co. Ltd., Hamilton

MANUFACTURERS OF MICROMETER DIAL INDICATORS AND GAGES

Booth 714, Astetool Show, Detroit, April 21-28



FLUIDICS AT WORK

Why the decision about industrial wastes belongs on management's desk

Disposing of industrial wastes is no longer a simple matter of dumping unwanted materials into a nearby stream. Rather, it has become a problem that touches many phases of business.

The reasons are simple: Pressures (legal and social) often make dumping impossible. Equally important, valuable materials often go down the drain with wastes.

Three-way advantage. Alert management sees in the proper handling of wastes an opportunity to improve community relations, avoid entanglement with the law, and increase profit margins through recovery.

How it works. A Ft. Wayne manufacturer found that his plant wastes contained contamination materials that could not be fed into an open stream. But after a Permutit Colloidair System was installed, solids were easily separated out for disposal in pits. And the remaining clarified liquids go into the stream without chance of contamination.

Or look at what happened at a plant producing wood-fiber insulation board in Trenton, N. J. Here the Colloidair not only reclaims usable fibers, but also renders waste "white water" so clear that it is re-used in process equipment and cleaning.

Name any liquid waste problem. Permutit makes a complete line of treatment equipment. And chances are good that, if recovery is involved, the installation will soon pay for itself.

Waste treatment is only one phase of Fluidics—the integrated Pfaudler Permutit program for helping industries handle liquids and gases more profitably.

FLUIDICS AND YOU For details, and an introductory book on Fluidics, write to our Permutit Division, 50 West 44th Street, New York 36, New York.

PFAUDLER PERMUTIT INC.

A world-wide company with plants in Germany, Great Britain, Canada, Mexico, Japan, as well as the U.S.A.

DU VERRE, INC., Arcade, N. Y., fabricator of corrosion-resistant resin bonded fiberglass equipment for the process industries, has recently doubled its production area with the erection of a large, modern steel frame building which will add much-needed office space as well as increasing manufacturing facilities. The building features a 25-ft. overhead clearance, permitting one-piece fabrication of large process equipment, such as the huge vessel over 47 ft. long and 10 ft. in diameter which du Verre recently shipped in one piece to an eastern company.

tor of technical sales. In 1948 he became general manager of the pigment color divisions and the chemical division of Imperial, and also a director of the company—positions he has held until his retirement.

Heyden Newport Chemical Corp. has named T. H. Risch field sales manager, and G. T. Roberts a product sales manager, for the Heyden Chemical Division.

Mr. Risch, formerly product sales manager for organic intermediate chemicals, will be responsible for the division's 10 district sales offices. Mr. Roberts has been the assistant group leader of the corporation's Applications Research Group. His new responsibility will cover the sales of synthetic resin chemicals.

Joseph T. Ryerson & Son, Inc., announces the following appointments at the Seattle, Wash., steel and aluminum service plant.

Dwight E. Schurman is named general superintendent, succeeding Chris A. Papadinoff who becomes general superintendent of the firm's plant in Boston, Mass. Chester C. Warren is appointed manager of work order, industrial plastics and bearings sales. His former post of manager of the general order department is assumed by Marvin R. Konupek who continues to head the merchandise-inventory department.

Cavedon Chemical Co. reports that approval of Cavcocide, a slimicide product, has been received from the Food and Drug Administration.

A statement from the Food and Drug Administration in Washington said "Cavcocide, as intended for use in the manufacture of paper pulp, cannot reasonably be expected to become a component of food under its intended condition of use."

Cavcocide is fortified Chlorine dioxide solution which is now used in paper mills to prevent the formation of slime. Having been determined as a non-toxic agent, it opened the way for use of the product in the manufacture of papers which would be utilized by food processors.

Plant Piping Problems?

Solve Them With

ARMCO WELDED STEEL PIPE

New steels are born at Armco

Simple or complex plant piping systems can be solved equally well with Armco Welded Steel Pipe. Special fittings, elbows, tees and wyes are made to your plans and supplied attached to straight runs of pipe. This economical pipe is ideal for white water, waste, stock, water supply and steam lines. Uniform wall thicknesses make Armco Pipe strong throughout, and the smooth interior means there is nothing to retard the flow of fluids.

Write for your copy of the catalog, "Armco Welded Steel Pipe for Industrial Uses." Armco Drainage & Metal Products, Inc., 6540 Curtis Street, Middletown, Ohio.

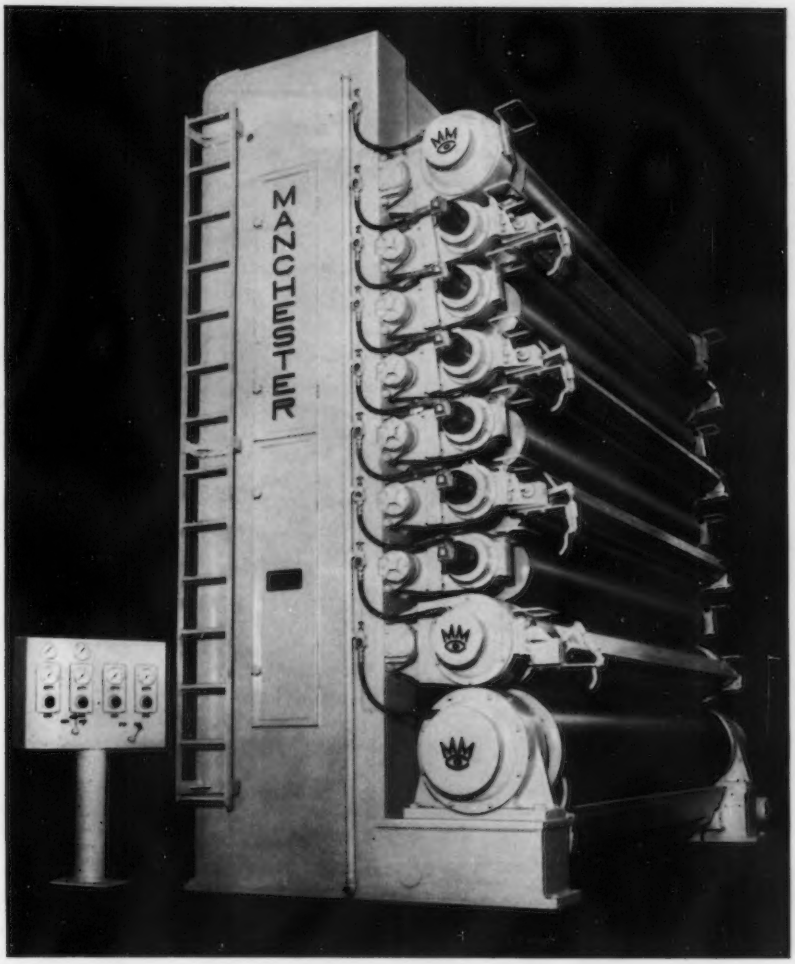
Steel

ARMCO DRAINAGE & METAL PRODUCTS

ARMCO

Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division
The National Supply Company • The Armco International Corporation
Union Wire Rope Corporation



Manchester gives you everything you want in a calender

New Manchester nine-roll, 147 inch face open side calender built for Champion Paper & Fibre Company, Hamilton, Ohio

Here is a truly *new* open side calender *with independent load control of any roll in the stack.* Now you can produce a smoother, more uniform finish on a wider range of fine papers. Another outstanding feature is Manchester's air-over-hydraulic loading system. It permits precise pressure adjustments for all rolls . . . gives you all the advantages of sturdy hydraulic loading . . . *yet uses only ordinary mill air pressure as a power source.* No hydraulic pumps, tanks or motor drives needed!

All loading, unloading and *nip relieving* is accomplished through levers within the rugged, all-steel calender frames. Every adjustment is under finger-tip control from a master console.

This new calender is another example of how Manchester builds profits for paper makers through *modern*, efficient design concepts. For the new equipment you're planning now, why don't you call in the Man from Manchester? **The Manchester Machine Company, Middletown, Ohio**

Manchester . . . profit builders for paper makers

THE MANCHESTER MACHINE COMPANY

Prices of Fibers

MARKET WOOD PULP

SECOND QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$82.50/ 90.00	§$90.00/ —	§$80.00/ —	§$90.00/ —
Bleached Gw'd	$ 97.50/100.00	$97.50/100.00			
Kraft, Blchd.	‡152.00/160.00				$157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		140.00/ —		
Kraft, Semi-bleached.	140.00/145.00				
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	‡150.00/155.00	‡150.00/155.00	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd.	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances.
‡ Depending on Brightness.

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED APRIL 12

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	n.a.	n.a.
3	$7.50/7.00	$8.50/7.75	$7.50/7.00	n.a.
4	7.00/6.25	7.25/6.25	6.50/6.25	8.50/ —
5	6.25/5.75	6.00/5.50	6.00/5.50	8.00/7.00
6	5.75/4.75	5.25/5.00	5.25/5.00	6.50/4.50
7	4.75/4.25	4.50/4.00	4.75/4.00	4.25/4.00

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Apr. 18	Apr. 18	April	April
No. 1 Mixed Paper	$ 7.00/ 9.00	9.00/ 11.00	8.00/ —	12.00/ 13.00
No. 1 News	14.00/ 15.00	14.00/ 15.00	16.00/ —	12.00/ 13.00
Overissue News (Lg. size)	13.00/ 15.00	13.00/ 15.00	21.00/ —	19.00/ 20.00
Mill Wrappers	19.00/ 22.00	13.00/ 15.00	11.00/ —	14.00/ 15.00
Old Corrugated Containers	22.00/ 23.00	21.50/ 22.00	20.00/ —	23.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	30.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	32.50/ 35.00	35.00/ —	32.50/ —	35.00/ —
(Semi-chem. medium)	45.00/ —	45.00/ —	42.50/ —	— / —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Unprintd.	60.00/ 65.00	65.00/ 75.00	60.00/ —	60.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	25.00/ 30.00	20.00/ —	32.50/ 35.00
White Newsblanks	50.00/ 55.00	50.00/ 55.00	35.00/ —	60.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	57.50/ 60.00	60.00/ —	70.00/ 75.00
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	70.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	95.00/ —
Hd. White nv. Cuts	100.00/105.00	105.00/110.00	90.00/ —	113.00/ —
Col. Tab. Cards	42.50/ 45.00	42.50/ 45.00	47.50/ —	40.00/ 45.00
Manila Tab. Cards	62.50/ 65.00	62.50/ 65.00	65.00/ —	70.00/ 75.00
No. 1 Col. Ledger	37.50/ 42.50	37.50/ 42.50	42.50/ —	29.50/ 32.50
White Ledger	50.00/ 55.00	52.50/ 57.50	52.50/ —	55.00/ —
Mixed Book & Mag.†	22.00/ 25.00	— / —	14.00/ —	— / —
No. 1 Books‡	19.00/ 21.50	17.00/ 19.00	30.00/ —	16.50/ 18.50

† Includes Time & Life; no coarse groundwood. § Not to exceed 10% of groundwood.

OBITUARIES

Andrew F. Tolland, 69, of Milton, Mass., retired supervisor of paper inspection at the Oxford Paper Co.'s plant in Rumford, was stricken at the Lanam Club, while acting as an ink consultant at the Oxford Paper Co. in Lawrence. His death was attributed to coronary thrombosis.

Walter P. Paepcke, 63, chairman and chief executive officer of the Container Corp. of America and noted patron of the arts, died in Billings Hospital after an illness of several weeks.

Mr. Paepcke was largely responsible for the development of the Aspen, Colo., area as a winter ski resort and cultural center.

Vinson Krapfel, 51, director of purchases of Consolidated Water Power & Paper Co., died April 12 at Venice, Fla., following a brief illness.

A native of British Columbia, Canada, Mr. Krapfel attended the University of Wisconsin. He was self-employed in Madison as a wholesale lumber dealer before joining Consolidated's staff in 1943. He was named director of purchases in 1945.

Robert L. Cashen, administrative vice president of The H. K. Ferguson Co., internationally known Cleveland firm of engineers and builders, passed away on April 6. He had been with the Ferguson company since 1946.

Edmond C. Melcher, 65, died April 10, at a Portland, Me., hospital after a long illness.

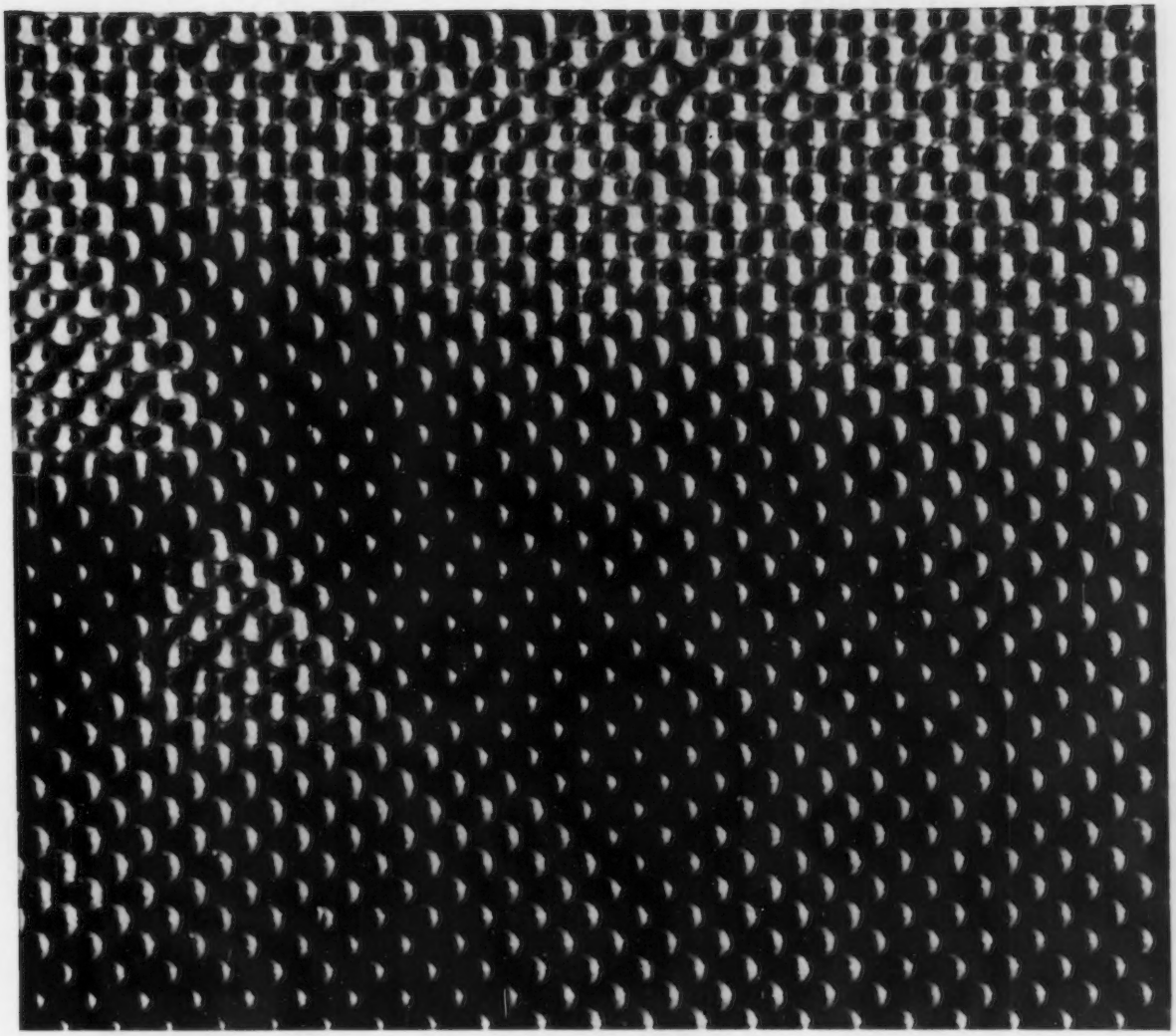
From 1921 until his death he was employed by the S. D. Warren Company and since 1948, he had been manager of the Woodlands Department.

Harrison Albert Smith, 71-year-old retired president of Wisconsin Container Corp., died April 7 at his Crane Hammock home in Marathon where he had been a permanent resident one year.

Robert E. Meyer, 80, of Cincinnati, Ohio, who founded the United Paper Products Co. 47 years ago, died April 5 after a long illness.

Mr. Meyer was owner of the paper firm until 1954 when it was incorporated. He then became secretary-treasurer.

DOW | LATEX



Superior pick resistance evident as 120-line copper engraving remains clean after 20,000 impressions.

NOW . . . with **NEW DOW LATEX 630**

• Superior Pick Resistance • Excellent Mechanical Stability
• Exceptional Starch Compatibility

Here is the newest development in latex for paper coatings, new Dow Latex 630 . . . raising quality to a new high and giving you new manufacturing advantages and new selling features! New Dow Latex 630 gives you better control of paper uniformity . . . helps you stabilize paper surface quality . . . brings printing closer than ever to really true-to-life reproduction.

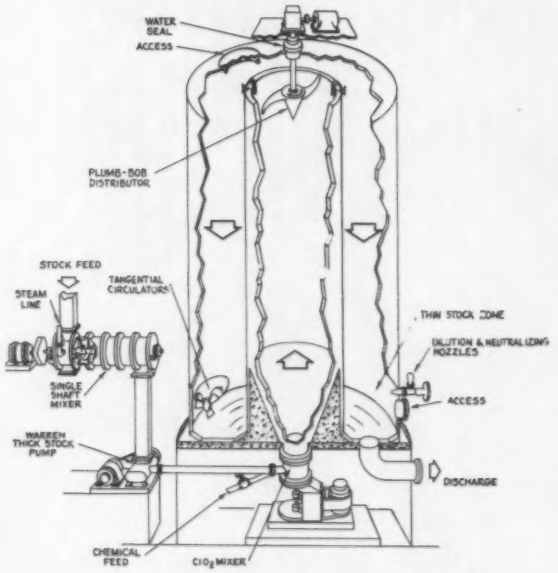
It will pay you to get detailed information now from The Dow Chemical Company, Midland, Michigan, Coatings Sales Department 1933DP4-25.

THE DOW CHEMICAL COMPANY · MIDLAND, MICHIGAN

NEW EQUIPMENT & SUPPLIES

Concentric Tower Design Improves ClO_2 Bleaching

A concentric tower design, introduced by Dorr-Oliver Inc., Stamford, Conn., provides high density chlorine dioxide bleaching of kraft and other pulps. It employs upflow-downflow operation in a single, compact structure.



The bleaching tower unit consists of external heater-mixer, thick stock pump and ClO_2 mixer; and inner "upflow" tower with unique "plumb-bob" distributor; and an outer "downflow" cylinder including dilution, neutralizing, circulation and discharge equipment. The concentric design eliminates the need for mounting equipment above the bleaching tower. The low diameter:height ratio limits surface area and consequently, reduces heat loss, states Dorr-Oliver.

Chlorine dioxide is introduced to the pulp at the base of the tower, which keeps the mixture under hydrostatic pressure for nearly an hour. By the time the pulp is distributed over the circular top weir, 90 per cent of the ClO_2 is consumed, reducing ClO_2 losses and preventing puffs. The "plumb-bob" distributor spreads the pulp uniformly into the annular downflow section.

Retention time in the downflow phase can be varied to meet changes in pulp and tonnage requirements, and to provide continuous control of the reaction. Dilution, neutralization and repulping are accomplished in the bottom zone of the annular downflow section. Retention time and other controlling factors in the treatment can be held constant for almost all the pulp through draw-down, in the event of shut-down or change of pulp grade.

The design incorporates standard tile-lined steel construction. Tiling concerns estimate lower first costs and predict lower maintenance costs because of the small surface area and the absence of small diameters and compound curves in the reaction zone.

The Dorr-Oliver bleaching tower is said to offer the following advantages over previous designs:

1. ClO_2 losses reduced; puffs eliminated.

2. Retention time fully controlled, even during emptying.

3. Minimum space required; heat loss and power requirements minimized.

4. Reaction limited to tower proper: ClO_2 is introduced at charging port, neutralized before discharge.

5. First cost substantially reduced.

The tower is now successfully operating in kraft pulp production at Potlatch Forests, Inc., in Lewiston, Idaho, and is available in 100 to 800 ton per day capacities. It is suitable for erection either indoors or out, and is fully compatible with normal flow sheets for kraft pulp production incorporating one or more chlorine dioxide bleaching stages. Patent protection has been applied for.

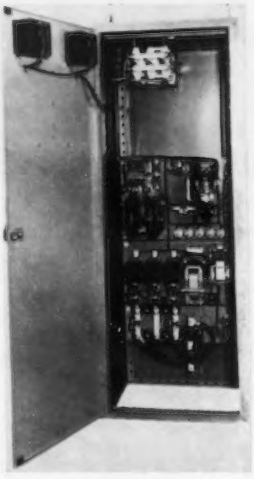
Motor Control Employs Static Components

A motor control, called Static Slipsyn starter, for application on all low- and high-voltage synchronous motor starting equipment is now available from the Westinghouse Electric Corp.

The circuitry employs all static components and performs complex logic operations, including: application of motor-field excitation at both the proper speed and the most favorable rotor and stator relationship; detection and removal of excitation if the motor pulls out of synchronism; and protection of the starter or damper winding from over-heating when operating at subsynchronous speed.

With this starter, the motor field can be applied accurately up to 99 per cent of synchronous speed, states Westinghouse. Pull-out protection is now adjustable from 1 to 8 poles of slip, eliminating tripping due to transients. Also, due to the low-power requirements of the starter, all power can be obtained from the a-c supply; several supply voltages can be used from a multitap primary on the supply transformer. Thus, a single assembly can be used for most applications without component changes.

Because the starter is grouped into functional modules, which are mounted on separate boards, detection and replacement of defective parts is said to be simplified. For example, failure of the starter to detect pull-out indicates that the pull-out module is defective; only the pull-out module need be replaced. The only instrument required for trouble shooting is a voltmeter. For further information, write Westinghouse Electric Corp., P.O. Box 2099, Pittsburgh 30, Pa.



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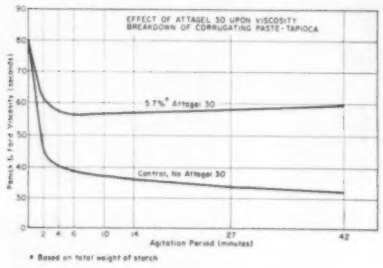
Stabilizes Viscosity Of Corrguating Adhesives

A low cost grade of colloidal attapulgite designed to counteract the viscosity breakdown inherent in


EFFECT OF ATTAGEL 30 UPON VISCOSITY BREAKDOWN OF CORRUGATING PASTE-TAPIOCA
5.7%* Attagel 30
Control, No Attagel 30
Agitation Period (minutes)
* Based on total weight of starch

starch corrugating adhesives has been developed by Minerals & Chemicals Corp. of America. Called Attagel 30, the material increases in viscosity under the action of shear forces as in the recirculation systems used in corrugated production processes.

Viscosity breakdown usually requires frequent glue roll adjustment and results in the loss of overall adhesive efficiency. It is not uncommon for an adhesive having an initial orifice-type viscosity of 60 seconds to break down to 25 seconds during the life of the batch. The addition of Attagel 30 to the batch has the effect of stabilizing the viscosity of the total system within narrow limits, it is claimed. The results of laboratory tests with a tapioca corrugating starch adhesive are shown in the graph.

In field tests the Attagel 30 has reduced adhesive consumption by as much as 20 per cent. Other operating advantages attributed to its use on corrugating lines have been the elimination of flooding, increased operating speed, reduced frequency of glue-roll adjustments and improved bond due to better penetration and a spreading properties on highly sized board. Additional information may be obtained from Minerals & Chemicals Corp. of America, Essex Turnpike, Menlo Park, N. J.

Liners Replaced Easily in Bronze Bushed Pillow Block

Bronze precision liners can be replaced quickly and easily in pillow blocks of a design announced by Dodge Manufacturing Corp., Mishawaka, Ind.

The sleeve bearings are recommended for applications where shock and pressure, elevated temperatures, high shaft speeds and corrosive conditions are anticipated. For the first time, according to Dodge engineers, it is possible to replace a worn bushing, or liner, without removing the bottom half of the housing from its support. Only the cap of the block is removed, the shaft is lifted just enough to permit the lower half of the liner to be loosened and slipped out. A new bronze liner can then be inserted and seated by tapping lightly. The cap liner can also be replaced very easily. Rotation of the liner with the shaft is prevented by a brass retainer spool recessed between cap and base of the housing.

The bronze-bushed line includes split journal bearings (two-bolt) for standard power transmission shaft sizes from 1 15/16-inches to 2 15/16-inches; rigid pillow blocks (four-bolt) for shafts from 3 7/16-inches to 8 inches, and angle pillow blocks for all standard transmission shafts.

Semisteel housings have tongue-and-groove joints in four-bolt base sizes and fitted bolts in smaller sizes to prevent cap shifting. Ductile iron housings may be obtained on order. Bushings are machined from high grade cast leaded bronze alloy. Liner tops are drilled and grooved to admit grease or oil and distribute it evenly throughout the bore. Bearing ends are precision machined to take thrust.

Small Model Of Centrifugal Screen

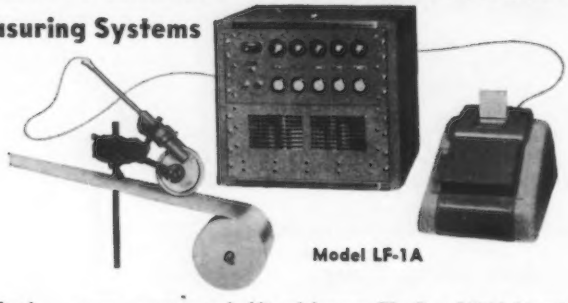
Bird Machine Co., South Walpole, Mass., is introducing the Model 6 Centriscreen, a smaller counterpart of the Model 14 and Model 10 Centriscreens which is said to provide high capacity screening at low cost per ton.

The Model 6 performs identical service for small fourdrinier machines and for a single screen per mold on cylinder machines. Built entirely of stainless steel, the Model 6 is only thirty inches high and thirty-four inches wide yet it delivers up to twelve hundred gallons of screened stock per minute.

The Model 6 Centriscreen is a

POST DECITRON ELECTRONIC PRODUCTS

Measuring Systems



Model LF-1A

Now! . . . a permanent record of lineal footage. The Post LF-1A Lineal Footage System combines the accuracy of proven electronic equipment with a visual "Clary" readout.

Ideal for accurate measurement for manufacturers of wire, paper, textiles and sheet metals. Sensing elements can be furnished so that measurements can be made in 1/16ths of an inch, 1/8ths, 1/4's or in full inch increments.

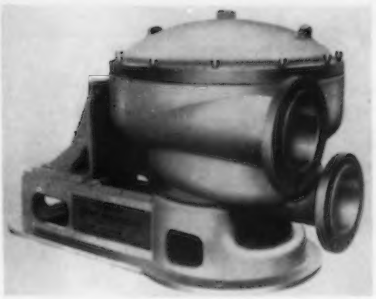
Write for literature.

See "Post" at the Automation show, Booth #444, N. Y. Coliseum

Decitron

ELECTRONIC PRODUCTS DIVISION

Post Machinery Co. | 175 Eliot St., Beverly, Mass.



totally enclosed screen, delivering stock to the head box at the desired pressure. The screen plates require no washing so that volume of fresh water input is reduced and higher stock temperatures are permitted.

Pipe Joint Sealer Is Teflon Tape

Thred-Tape Pipe Joint Sealer is now offered in 4 convenient widths—¼ inch, ½ inch, ¾ inch and 1 inch. Made of chemically-inert DuPont Teflon, Thred-Tape has proved effective for handling the most destructive acids, caustics, corrosives, biologicals, toxics and gases. It withstands high pressure, temperatures from —250° to +500° F. and can be used on all types of piping, it is reported.

To seal the joint, Thred-Tape is merely wrapped around the male threads. The connection is then made in the usual fashion. The tape fills all voids to provide a leak-proof seal. Because of the lubricating characteristics of Teflon, joints can be drawn up to maximum tightness. Thred-Tape is said to remain permanently plastic, permitting easy disassembly of connections even after years of service.

For complete information, contact Crane Packing Co., Dept. PJ-6 6400 Oakton St., Morton Grove, Ill.

Synthetic Suction Box Covers Extend Wire Life

Costa "Eagle Head" suction box covers consist of two parts. The upper part, on which the wire travels, is made of a synthetic material which is electrically bonded to a standard type compressed filler base. The synthetic material is neither a plastic nor a rubber. It is a material specially compounded to provide those physical properties which will not only reduce wire wear, but will reduce wear of the covers themselves. These properties are reported as:

Hardness: Shore "A" Durometer of 95, whereas other synthetics now in use rate 60-62. The material is soft, but not brittle and does not break or splinter.

Toughness: The material is not affected by acids or other chemicals used in papermaking. No swelling is evident when the cover is immersed in hot water for a long period of time.

Abrasion resistance is twice that of synthetic rubber (styrene butadiene) and three or four times that of other synthetics in use.

Coefficient of friction is low; hardly any surfacing is required. If the cover does have to be resurfaced, only very light treatment is necessary. This can easily be done by grinding the 0.39 inch thick top part.

Physical characteristics: density, 1.26 g/cm^3; tensile strength, 300 kg/cm^2; elongation, 400 per cent; permanent elongation, 40 per cent; rebound elasticity, 44 per cent; abrasion loss (calculated on abrasion-resistant natural rubber stock-100), 60 mm^3.

A survey of Canadian users indicates the following; with one material, a 33 per cent longer wire life has been found. This material, however, has a much higher coefficient of friction and a higher abrasion factor than the top material of the Eagle Head cover. Some users of the Costa

You'll get exceptionally low "first cost"
You'll use minimum power
You'll need less maintenance
with the
Kalamazoo "Side Hill" Washer

These practical slide washers give a better and more effective wash job than other washing methods. They may also be used as thickeners and savealls. These units are designed by Kalamazoo engineers — experts in serving the paper industry for more than 90 years. Our experience enables us to completely prefabricate the units of top quality materials. Installation supervision can be furnished.
Laboratory size units are available for experimental purposes in determining the proper angle and screen mesh.
Write today for information on capacities and cost estimates.

WOOD TANK DIVISION
Kalamazoo TANK & SILO CO. 1259 HARRISON ST. KALAMAZOO, MICH.

cover found a wire life extension of between 50 to 100 per cent.

Due to the many factors in operating any specific paper machine, such as speed, drag load, grit, mesh, wire length, and others, no fixed figures for the friction can be given, and accordingly, no guarantee for the wire life. The covers can be supplied in any length and width, with round or oval holes. Further information may be obtained from Costa International Corp., 2315 Broadway, New York 24, N. Y.

CHAS. T. MAIN, INC.

ENGINEERS

PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION

PULP AND PAPER MILLS

STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING REPORTS, CONSULTATION, VALUATIONS

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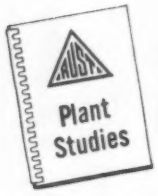
BOSTON, MASSACHUSETTS

CHARLOTTE, NORTH CAROLINA



Industrial Planning

Long range engineering studies, material flow surveys, space reports, complete design and construction services. Rust experience covers all phases of pulp and paper technology. Write for details.

THE RUST ENGINEERING CO.

PITTSBURGH 22 • BIRMINGHAM 3

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Mar. 12	Mar. 19	Mar. 26	Apr. 2	Apr. 9
1960	97.5	98.6	99.5	98.3r	92.8
	Mar. 14	Mar. 21	Mar. 28	Apr. 4	Apr. 11
1959	93.9	94.1	92.9	90.4	95.2

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	96.7	97.9	98.2‡	—	—	—	—	—	—	—	—	—	—
1959	87.8	90.5	93.2	94.4	95.5	95.6	84.5	96.0	92.4	97.4	96.2	86.6	94.0

‡ Preliminary

COMPARATIVE YEARLY SUMMARIES

	1953	1954	1955	1956	1957	1958	1959	1960
Year to Date	94.9	94.1	96.3	101.0	95.9	88.6	90.6	97.4
Year Average	92.3	91.6	96.2	97.9	90.4	87.0	94.0	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Mar. 12	Mar. 19	Mar. 26	Apr. 2	Apr. 9
1960	94	94	93	91	94
	Mar. 14	Mar. 21	Mar. 28	Apr. 4	Apr. 11
1959	93	94	95	89	94

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	92	95	93	—	—	—	—	—	—	—	—	—	—
1959	89	94	95	94	96	96	83	97	92	97	94	80	92

† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Apr. 9, 1960	LAST WEEK ENDING Apr. 2, 1960	CUMULATIVE TO DATE Jan. 1 to Apr. 9, 1960, incl.
% Activity	94%	91%	93%
TOTAL	316,815	304,514	4,424,436
Containerboard—Domestic Use	161,909	151,790	2,271,388
Liner	108,301	101,436	1,518,393
Corrugating Material	47,963	44,556	680,417
Chip & Filler Board	5,645	5,798	72,578
Boxboard—Domestic Use	98,577	102,018	1,387,479
Folding	62,266	61,242	830,922
Set-Up	11,634	12,708	158,825
Special Food Board	24,677	28,068	397,732
Other Paperboard	56,329	50,706	765,569
Containerboard Type	29,617	24,202	366,595
Boxboard Type	26,712	26,504	398,974
Total Orders			
Received	299,289	354,126	
Unfilled End of Week	450,380	467,129	

Alvin H. Johnson & Co.

INCORPORATED

Consulting and Designing Paper Mill Engineers

415 LEXINGTON AVENUE NEW YORK 17, N. Y.

PAPER MILL DESIGN PROCESS ENGINEERING POWER PLANTS

STRUCTURAL AND ARCHITECTURAL DESIGN

REPORTS APPRAISALS ESTIMATES AND SURVEYS

Looking for a new position?

●

Looking for new personnel?

●

Keep your eye on our Classified Advertising Section

AMERICAN AND ENGLISH CLAYS

FOR ALL PAPER MAKING PURPOSES

ANGLO-AMERICAN CLAYS CORP.

(Formerly: English China Clays Sales Corporation)

6 East 45th Street, New York 17, N. Y.

AIR LOADED — POSITIVE LOCKING

AERO-SHAFT

SAVES TIME . . . SAVES MONEY

The pneumatic Aero-Shaft holds any core firmly providing uniform tension that allows faster roll speeds.

Aero-Shaft eliminates core damage . . . deflates instantly for split-second removal from used to new core.

Double expanding rib section available for web widths over 40". Write today. Start saving with Aero-Shaft!

Folders, Rewinders, Embossers, Napkin and Core Machines, Letterpress and Flexographic Presses, Special Converting Machinery

PAPER CONVERTING MACHINE COMPANY
GREEN BAY, WISCONSIN

PUSH-BUTTON CONTROL SIMPLIFIES PHYSICAL TESTING

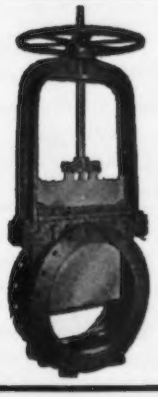
SCOTT MODEL CRE Constant-Rate-of-Extension Tester offers ultra-high accuracy inertialess electronic weighing . . . *plus* effortless automatic operation at a touch! Finger-tip controls provide a variety of crosshead speeds, complete crosshead control and a wide range of test capacities.

VERSATILITY is another time- and money-saving feature of Scott CRE Tester . . . designed for use with Scott's more than 150 different clamps and holding fixtures to meet ASTM, ISO, and Industry Test Methods and material requirements . . . for testing tensile, tear, adhesion, burst, seam construction and many other physical properties. Ranges from the lowest up to 1000 lbs.

Write for CRE Brochure TODAY!

SCOTT TESTERS
THE SURE TEST . . . SCOTT!

Scott Testers, Inc.
51 Blackstone Street
Providence, Rhode Island



RECORD PAPER & PULP STOCK VALVES "BONNETLESS" SELF CLEARING - - - "RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M. all iron, bronze or stainless steels, body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
- The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

"RECORD PRODUCTS EXTENSIVELY USED IN DEFENSE PROJECTS"

RECORD FOUNDRY & MACHINE COMPANY
LIVERMORE FALLS, MAINE, U. S. A.

PAPER TRADE JOURNAL CLEARING HOUSE

Help Wanted

PAPER MEN

$5,000 to $50,000

SALES • PRODUCTION • TECHNICAL

Finding and landing THE ONE BEST JOB requires sound analysis, careful planning, proper contacts and skillful negotiation.

Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing THE SPECIFIC SITUATION that most exactly fits the needs of each individual we serve.

If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

GEO. M. SUNDAY & ASSO.

PERSONNEL CONSULTANTS TO THE PULP, PAPER & ALLIED INDUSTRIES

6 East Monroe, Chicago ANdover 3-1970

TF

PAPER SALESMAN

Paper mill wants salesman with managerial potential to direct sales of lightweight craft specialties. Write stating experience & salary requirements, to: Box PJ 279, 125 W. 41 St., NYC.

A-25

RESEARCH and DEVELOPMENT

Immediate position open in Research and Development Department of small absorbent specialty mill located in the midwest. Prefer man with degree in chemistry and three years of paper mill experience. Knowledge of saturating papers and saturating resins desirable. Write to Box 60-77 care Paper Trade Journal.

M-9

Help Wanted

BETTER POSITIONS

$6000 to $35,000. Want a substantial salary increase, more opportunity or different location? This national 49 year old service connects you with best openings. You pay us only nominal fee for negotiations; This we refund when employer pays placement fee. Present position protected. In complete confidence, write for particulars. R. W. Bixby, Inc., 563 Brisbane Bldg., Buffalo 3, N. Y. A-25

ASSISTANT PAPER DEPARTMENT SUPERINTENDENT

Attractive present and future prospects with New York and Penn. Extensive experience required on operating and production problems with machines making broad range of lightweight printing and converting grades. Paper and pulp school or engineering education preferred. Confidences respected.

Apply to Division Manager

New York & Pennsylvania Co., Inc.
Lock Haven, Pa.

A-25-NC

QUALITY CONTROL SUPERVISOR

We have an opening for a Quality Control Supervisor. A technical training with two to four years experience in the Paper Industry and at least part of this time associated with Quality Control work is preferred, but not necessarily limiting. We feel there is good opportunity in our company for professional growth.
Our plant is located just Northwest of Philadelphia. There's a wide variety of living and recreational choices available. Send resume to—

PERSONNEL DEPARTMENT
HAMILTON PAPER COMPANY
MIQUON, PENNSYLVANIA

M-2

WANTED

COMBINED PURCHASING/TRAFFIC DEPARTMENT HEAD

For Kraft linerboard mill under construction at Counce, Tennessee. Located in TVA lake area.

Experience in both Purchasing and Traffic is desirable. Will consider applicants with primary experience in Purchasing if they have some background in Traffic.

Southern linerboard mill experience desirable.

Growth opportunities for qualified man.

TENNESSEE RIVER PULP & PAPER COMPANY

P. O. Box 33, Counce, Tennessee

A-25

GIBBS-BROWER CO., INC.

10 Depot Plaza, White Plains, New York
Telephone—Rockwell 1-1130

BRANCHES: Acepsa Albeniz #4418 Mexico 15, D.F.

400 Wash. Building Madison 3, Wisconsin

5270 E. Wash. Blvd. Los Angeles 22, Calif.

PRINTING PRESSES

1—60" 4-color W & H Flexo Press
1—51" 3-color Flexo Press
1—48" 6 color Cottrell-Heinrich 4-Flexo, 2-Gravure
1—48" Cottrell Heinrich, 3-Flexo, 1-Gravure
1—42" 4 color Cottrell Heinrich Flexo Press on 6 color Frame
2—42" 4 color Hudson Sharp Central Impression Cylinder Flexo Presses
1—40" 6-color W & H Flexo Press
1—40" 4-color W. & H. Flexo Press
1—33" 6 color Modern Clipper Flexo Press
1—33" 4 color Wolverine Hydro-Printer
1—32" 4-color Schmutz Bag Press
1—31½" 4-color Heinrich Flexo Press
1—28" x 42" 2 color Harris TC-109 Letter Press
1—25" 3-color Potdevin Flexo Press
1—24" 2 color Manhasset Flexo Tailprinter
1—24" 5-color Kidder Celloprinter
1—24" 4 color Kohlbach Flexo Press
1—20" 2-color Tail-Printer
1—18" 2-color Potdevin Oil Ink Press
1—2-color #2 Keese Press (Perfect Seal)
2—Harris Presses 1—S-1 & 1—S-4
1—Roll-A-Minute Gummed Tape Press

POWER PAPER CUTTERS

1—44" & 1—65" Seybold Precision
1—47" Late-type Seybold Sabre
Seybolds: Dayton: 35", 56" & 84"; 20th Century: 64", 54" & 38"; Holyoke: 55"; 12Z; 85"; 10Z: 65", 50", 44"; 7Y: 34"; 3Y: 32"; Oswegos: 36"; Dexter: 50", 44" & 32"; C & P: 44"; National: 44".

CAMACHINES

102" & 160" Type 18
1—82" 10-10
1—65" 10
1—65" Type 9-5
1—62" 40-1-AF
1—62" Type 42 for small rolls
1—52", & 1—42" Model 24-7
1—42", 50" & 62" Type 6
1—55" & 1—65" Type 10

OTHER SLITTERS

1—106" Langston (60" Diameter Rewind)
1—82" Langston Type R
1—65" S & R (Similar Kidder Model C.W.)
1—60" Langston Type A
1—60" Inman With Reeves Drive
1—52" Moisel (Shear-Cut)
1—40" Model "C" Fales
1—40" & 1—60" Kidder SH, 40" rewind
1—40" Beck Razor Blade Slitter
1—40" Langston "Type A" (Shear-Cut)
1—36" Kidder SLN (Shear-Cut)
1—31½ Beck Razor Blade Slitter
1—24", 1—30", 1—36" & 1—40" Kidder S.L. Shear cut

MISCELLANEOUS MACHINES

1—Lawtomatic Model "A" Jr. Toilet Roll Wrapping Machine
1—45" Beck Sheeter Model CSH with Auto-Piler
1—36", 1—45" CSHD Beck Sheeters
2—36" & 1—45" CSH Beck Sheeter
1—55" Globe Sheeter
1—78" & 1—94" M & W Sheeter & Layboy
Hamblet Sheeters—32", 45", 64", & 104"
2—Martini Combination Shirt Bag Machines
1—Beasley French Bag Machine
1—Potdevin Model 110-L Cello Bag Machine
2—Potdevin (Model 111-S) F & S Cello Bag Machines. Electric Eye
1—Weber Model "CN" Cellophane Satchel Bottom Bag Machine
1—Model 4-S & 1—Model 5 Potdevin Sack Machines
2—38" x 24" 4-Post Seybold Die Presses
5—Sheridans: 66" x 44", 60" x 30", 50" x 24", 44" x 22" & 36" x 18" and 1—Ford-Smith: 48" x 40"
1—V-Shape 6 oz. Paper Cup Machine
1—40½ Hudson Sharp Interfold Toilet Tissue Machine
1—27" x 44" Dietz Single-Fold Towel Interfolder
1—New Hudson Sharp No. 10-T Rotary Towel Interfolder
Embossers 48", 38", 32" & 50" Heavy Duty Hudson Sharp Tinter-Embosser
1—13½ x 13½ Hudson Sharp ¼ Folder
2—Paper Converting Machine Co's Single Fold Towel Machines
1—26½" x 22" Mosstype Rubber Plate Mounter & Proofer

Help Wanted advertisements continued on page 56

FOR SALE

FOR SALE

FOR SALE

BARKING DRUM
1—12 ft. diameter x 45 ft. long

BEATERS
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54" x 48", cast iron tubs.

CALENDER STACKS
1—3 roll 84" calender stack.
1—4 roll 72" Calender Stack. (Extra heavy duty).
1—5 roll 82" face.
1—5 roll 86".

CHIPPERS
1—96" Murray 4 knife Chipper—anti-friction bearings.
1—84" 10 knife Carthage Chipper. Anti-friction bearings, with motor

COATER
1—42" Chapman Extrusion Type Coater

CONSISTENCY REGULATOR
1—Poirer Stainless Steel, new condition

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Williams Hammermill.
1—Jeffrey Shredder.

CYLINDER MOLDS
1—30" diameter x 72" face.
5—36" diameter x 75" face, with couch rolls
1—36" diameter x 82" face.
3—36" diameter x 90" face, 18" diameter couch rolls.
2—36" diameter x 100" face, anti friction bearings.
3—42" diameter x 106" face.
2—60" dia. x 170" face.

DISINTEGRATOR
1—Shartle 8" disintegrator (new) with 125 horsepower induction motor (totally enclosed)

DRIVES
1—#6 Reeves vertical—anti friction bearings, totally enclosed.
1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive.
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)

DRYERS
1—16" diameter x 54" face (steel).
1—28" diameter x 84" face.
2—30" diameter x 48" face with bearings.
2—Calender Dryers, bronze, 30" x 128" with frames, gears & necessary rolls to make up the unit.
1—36" diameter x 44" face.
4—36" diameter x 76" face.
1—36" diameter x 84" face, and gear.
20—48" diameter x 48" face with bearings.
2—48" dia. x 52" face with frames, gears, bearings.
2—48" x 60" face with frames, gears & bearings
1—48" x 96" face.
2—48" x 108" face, with bearings & gears, 125 lb. pressure.
6—48" diameter x 130" face.

EMBOSSING CALENDERS
1—43" 3-Roll Embossing Calender.
1—51½" 3-roll Smoothing Calender.
1—57" 3-roll Embossing Calender.
1—62" 2-roll Embosser.
1—90" 2-roll Smoothing Calender.

FILTER
1—Dorr-Oliver Filter, 3 ft. dia. x 6 ft. face, stainless steel construction, with pump.

FLAT SCREENS
1—8 Plate "Packer".
1—12 Plate "Packer".
2—12 Plate "Packer" Stainless Steel Vats

HOGS
2—Mitts Merrill Type 15 C. F.

JORDANS
1—Jones Standard, new spare tackle, with 75 h.p. motor.
1—Noble & Wood Monarch, Type D, anti friction bearings.

LABORATORY EQUIPMENT
1—4" face x 36" diameter Saveall
2—12" x 12" Sheet Molds.
1—Washer for 5 lb. Beater.
1—24" Saveall, stainless steel.
1—20" Fourdrinier Wet End & Press Section.
2—8" x 8" Valley Sheet dryers.
1—12" x 12" Valley Sheet dryer.
1—18" x 20" Williams Sheet Dryer
1—5 lb. Valley Beater.
1—15 lb. E. D. Jones Beater.
1—8" x 8" Valley Hydraulic Press.
1—Greene Freeness Tester.
1—Cady Micrometer.
1—High speed Jordan, anti-friction bearings.
7—Mullen Testers.
1—2 qt. Auto Clave, Stainless Steel.

MISCELLANEOUS
2—Bird Centrifflers

MOTORS
4—25 h.p. Westinghouse, totally enclosed, ball bearing. 705 r.p.m.

PRESS ROLLS
2—Chilled iron, chrome plated 9" x 72".
1—Chilled iron, chrome plated 12" x 100".
1—Chilled iron, chrome plated 10" x 74".

PULPER
1—#1 Jones Pulp Master.

PUMPS
1—Economy Fan Pump 6000 g.p.m., 20' head, 50 h.p. motor.

REELS
1—72" Downingtown Reel, 2 bowl.
1—84" 3 bowl revolving reel.
1—86" 2 bowl reel.
1—100" Rice Barton 2 bowl Reel, heavy duty.
1—116" Downingtown, 2 bowl, anti friction bearings.
1—123"—3 bowl Revolving Reel.
1—134" 2 drum.

REFINERS
1—Rice Barton Dynofiner, details on request.
1—12" Wiener Refiner, with 200 h.p. motor.
1—double disc 36" Bauer Refiner, with 2-150 h.p. motors.
1—double disc 24" Bauer Refiner, with 2-50 h.p. motors.
2—Bauer double disc 24" #185E Refiiners, each with two 100 h.p. motors.
1—Dilts Classifiner, anti friction bearings.

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
4—#2A Bird Rotary Screens, copper vats.
7—Trimbey, Senior Knotter Screens.
1—#2A—50 Bird, copper vat.
2—APMEW Rotary Pulp Screens.

SAVEALLS
1—24" Continuous Saveall, stainless steel.
1—LaMort 48" diameter x 82" face cylinder mold.
2—Savealls, cylinder molds, 42" diameter x 106" face, brand new vats.
2—Savealls, Rice Barton, cast iron vats, cylinder molds 42" diameter x 128" face, complete with 18" diameter couch rolls, all in very good condition.

SCREENS
2—Shartle Secectifier Screens

SHEETERS
1—44" Spot Sheeter Complete
1—60" Hamblet with layboy.

SHREDDER
1—16" "Swift" Paper Shredder.

SLITTERS & WINDERS
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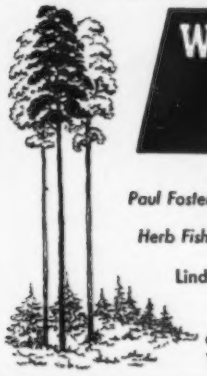

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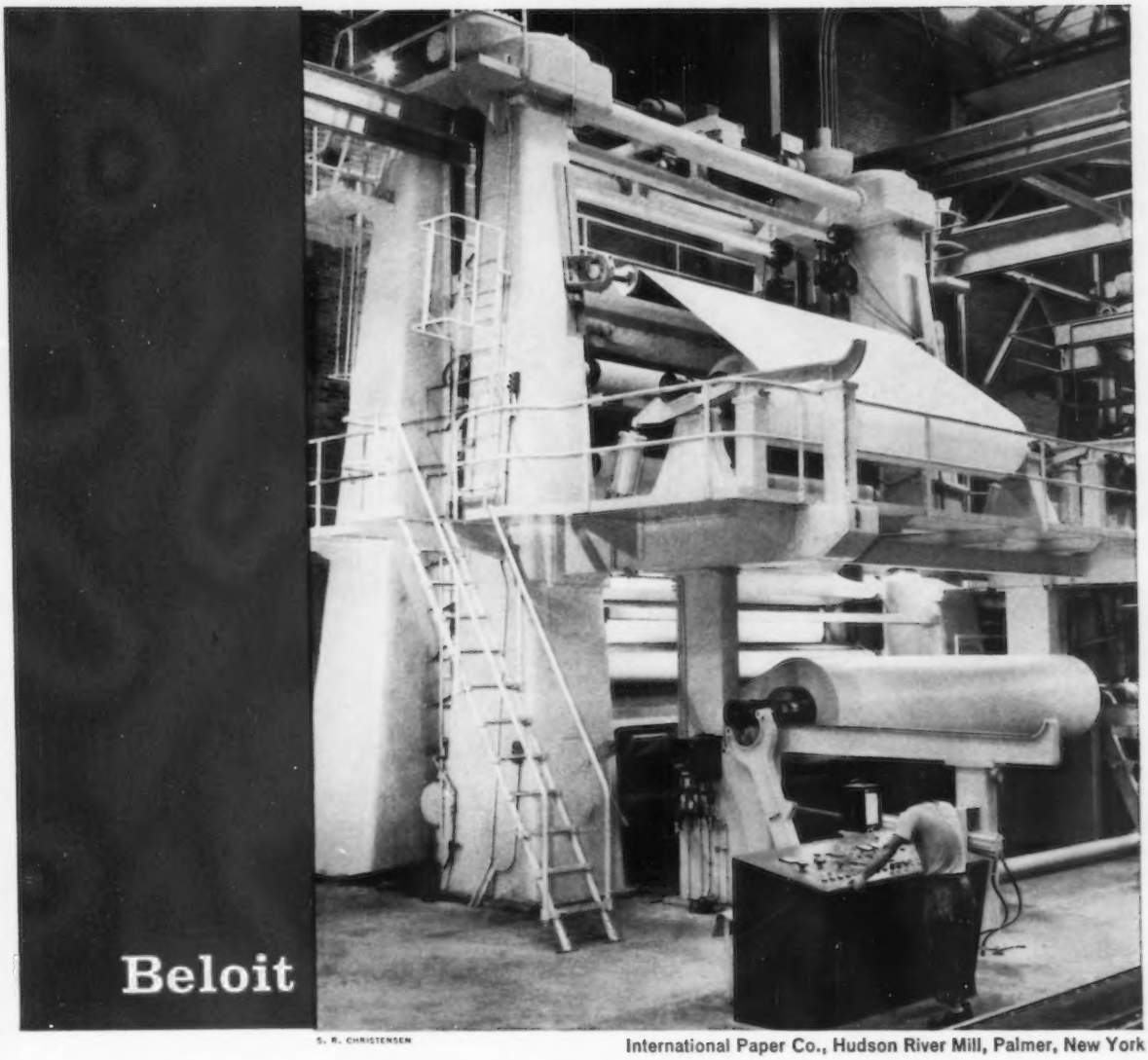

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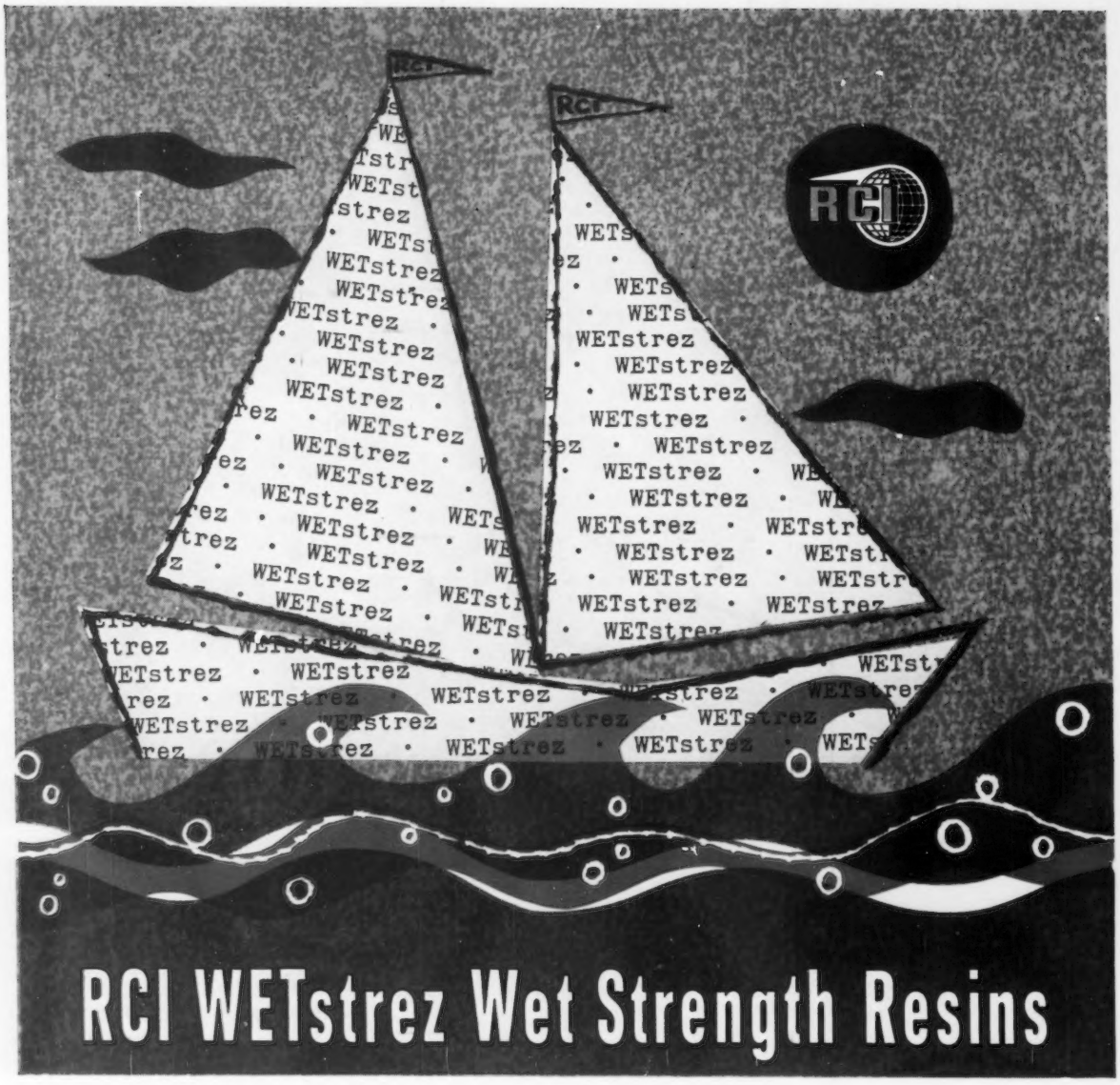

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